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## PHYSIOLOGY.

### LECTURES
ON THE
### PHYSICAL CONDITIONS
OF THE
### TISSUES OF THE HUMAN BODY
AS APPLIED TO THE EXPLANATION OF
### VITAL PHENOMENA.

*Delivered at the College of France in* 1834.

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### LECTURE XX.

*Sound, a Physical and not a Vital Phenomenon.—Difficulty, arising from their rarity, of studying some Abnormal Sounds of the Heart.—Artificial production of a Bruit de Soufflet, and the Bruissement of circumscribed Aneurysm.—The Bruit de Râpe. Its Physical Cause.—Abnormal Sounds in Other Parts.—A Ringing in the Ears. Its Source and Treatment.—Bruit in the neighbourhood of every large vessel.—Aneurysm occasioning a Third Bruit.—M. Bouillaud's "Bruits de Diable."—Frémissement.—Less important Bruits.—Bruits emanating from the Lungs.—The Chest as a Musical or Physical Instrument of Sound.—The Elasticity of the Lungs.—The Bruit Respiratoire.—The Soufflet Bronchique.—The Soufflet Tracheale.—The Mechanism of the Voice.—Speech through the Glottis.*

IN my last lecture, Gentlemen, I spoke to you of two abnormal bruits which are often heard in the circulation, viz., the bruit de soufflet and the bruit de râpe. The former sound has been familiar to pathologists, and especially to those who have occupied themselves with the phenomena of auscultation, for many years. It has been long known as a fact, that when you listen to the circulation of the blood, as it takes place through the great vessels in the neighbourhood of the heart, you often hear a peculiar sound, or bruit, somewhat resembling the noise produced by a bellows, and hence its name, "bruit de soufflet." This may be accompanied by a diseased condition of the heart and arteries, or, as is, I believe, more frequently the case, may be perfectly independent of any pathological lesion. But we also had occasion to notice a bruit which is developed in consequence of a change of organization, and presents itself in company with other abnormal sounds, or is heard supplying the place of one of the natural ones. This is the saw sound or "bruit de râpe," from the harsh, grating sensation that accompanies it.

Before I enter into a consideration of any abnormal sound, let me here remind you, once again, to lay aside those preconceived ideas which, I fear, you have adopted as to the nature of the bruits emanating from the human body, and the heart in particular. Your medical education has, no doubt, led the greater part of you to consider the stethoscopic phenomena of the heart and circulating system, both in health and disease, as being purely of a vital nature; but if you wish to follow my lectures with advantage, you must endeavour to get rid of this radical error. Nothing can be more contrary to the fact than the supposition, that the sounds of the heart and arteries are of a vital nature, or depend upon a proximate vital cause. They occur indeed in organs possessing life and exercising certain vital actions, but that is all. Sound in the animal body, as well as in the external material world, is a simple physical phenomenon; and for its production we must have a physical cause, the concurrence of certain physical conditions, which I have already explained to you at length.

The abnormal sounds of the heart must, therefore, be sought in the operation of some physical cause or causes; but it is by no means so easy a matter to discover what the precise nature of that cause may

be, and to adapt each condition to the varying and uncertain phenomena exhibited by the heart in a state of disease, and, above all, to seize an explanation which shall be perfectly in harmony with the theory we have already proposed on the natural sounds, and with the numerous physiological facts we have adduced in its support. One cause of difficulty against which the physician has to labour in forming an explanation of the abnormal bruits of the heart is the impossibility of studying them at his leisure. For the normal sounds this cannot occur. The great majority of patients in our hospitals will give you a daily opportunity of examining and reflecting on, with all the attention and time the subject may require,—of studying I say at your leisure, the healthy bruits of the circulating system; but we cannot observe the morbid phenomena as we wish, much less certain symptoms of rare occurrence. It is only, as it were, by accident that these sometimes present themselves to our notice. Even in the wards of our largest hospitals you may often wait for a considerable time before you find a patient who furnishes an example of an abnormal bruit, and then in all probability it will be merely the bruit de soufflet. Thus, for example, I lately examined all my patients at the Hotel Dieu for twenty days consecutively before a well-marked pathological bruit fell under my notice.* But the difficulty of our subject must not deter us from endeavouring to throw all the light upon it that we can obtain from the accessory sciences. With this view I have made several physical experiments, chiefly in order to ascertain the effect of fluids passing through tubes under various circumstances, and I have arrived at some results that are interesting, and may hereafter be productive of practical benefit. Thus I fitted a large syringe to several gum-elastic tubes of various diameters, and pushed in a quantity of fluid. The passage of the water through the tubes gave rise to a very distinct bruit de soufflet, and hence I conclude that in all probability the seat of the abnormal sound resides in the parietes of the vessels themselves. The reasoning is not indeed rigorously strict or demonstrative, but it is the nearest approach that we can make to an explanation in the present state of the science.

If the theory which I have just ventured to advance be true, or shall be confirmed by further observations and experiments, it will follow that the bruit de soufflet depends upon the dilatation of the arterial branches; and we shall thus obtain an additional proof of a proposition laid down in an early part of the present course, viz., that at each contraction of the heart the arterial tubes through the whole system undergo a corresponding degree of dilatation. This, you know, has been positively denied by several physiologists of note. However, in order to develop the abnormal sound of which we speak, there must be something more than a simple expansion or dilatation of the artery, and this part of the subject requires a thorough investigation. Perhaps the frottement of the blood against the parietes of the vessels may share somewhat in the production of the bruit de soufflet, or a certain degree of pressure with a certain current of fluid may be necessary. These are merely ideas which I throw out for your consideration. Do not take them as facts, or as materials of a positive theory; for, as I before remarked to you, our physical knowledge is here extremely limited, and we have an immense progress to make before we can hope to explain with certainty the physical conditions giving rise to the abnormal sounds of the heart.

We have, however, I believe, made some little progress already in the investigation of this difficult subject: thus as to the explanation of the bruissement heard in the neighbourhood of aneurysmal tumours in cases of circumscribed aneurysm (and which, by the by, LAENNEC distinctly calls "a vital phenomenon"), we found this bruit most distinctly in the parietes of an elastic tube, where a portion, weaker no doubt than the rest, had given way, and produced in this manner an artificial circumscribed aneurysm. The sound which we heard over the dilated pouch of elastic tissue was exactly similar to the bruissement described by CORVISART as a symptom of aneurysm of the ascending aorta. So far the idea which we have advanced was confirmed by experience, and the error of LAENNEC, at the same time, clearly demonstrated; for if the bruit, or, as he calls it, the "fremissement cataire" of aneurysm, were in reality a vital phenomenon, how comes it that it was faithfully reproduced in the experiment to which we have alluded?

There is another bruit which frequently enters as a symptom of organic disease of the heart, and which, I have no doubt, admits of explanation upon similar principles. You remember I spoke to you of a "bruit de râpe," heard whenever an obstacle occurs to the free passage of the blood through the valves of the great vessels springing from the heart. I made

* Magendie has the Salle Saint Monique, which contains seventy-six beds.—ED. L.

some experiments with elastic tubes, and succeeded before lecture in reproducing this abnormal sound, but when I endeavoured to obtain it before the class, my experiment failed; since then I have reflected upon the causes of our failure, and it struck me that we had not sufficiently imitated the physical conditions in which the vessel that produces the bruit de râpe is placed. Thus, we were content with merely suspending a portion of artery from the internal surface of the elastic tube, and then forcibly injecting a quantity of water against the obstacle; but it is evident, that in order to approach as near as possible to the condition presented by an ossified valve, or a tumour &c., we should have suspended some solid resisting body, like a piece of wood, in the tube: perhaps this may have been the cause of our failing to obtain before you the bruit de râpe. I shall, however, repeat the experiment with more caution, and we shall then see whether a more solid obstacle to fluid may not produce the desired result. When we consider the persistence of the bruit de râpe, as contrasted with the bruit de soufflet, and reflect upon the phenomena that constantly accompany it, we cannot avoid connecting this abnormal sound with some permanent pathological condition of the part in which it is produced. I consider the physical cause of the bruit de râpe to be some obstacle of a solid nature generated in the substance of the artery, and thus partially obliterating its cavity, or some mechanical impediment to the passage of the blood through the orifices of the heart, which are guarded by valves. At least in all the post-mortem examinations which I have made of patients who have exhibited this stethoscopic symptom during life, I have always found the pathological change now described, and hence am induced to attribute the bruit de râpe to the manner in which the current of the circulating fluid strikes against the morbid production opposed to it.

Let us now pass to some sounds which are occasionally heard in other parts of the system. These are common to either the arteries or the veins, but they have been neglected by the greater part of physiologists, or merely attracted the passing notice of the physician, without giving rise to any deep or philosophical investigation. Thus, in some cases, one of the chief symptoms of which a patient complains, is a ringing in his ears. You must have all remarked this phenomenon at one time or another in yourselves or others. On certain occasions the bruit is extremely distinct and strong; indeed so strong, that the patient complains of its preventing him from enjoying a moment's rest or sleep. At other times there is a constant dull murmur, which is most tormenting. It may, I think, be explained, by the frottement of the circulating fluid against the parietes of the carotid artery, as it passes to the brain from the base of the skull through the carotid foramen.

Let me call to mind briefly the peculiar disposition of this vessel in the upper part of its course, before it breaks up into the branches composing the anterior and lateral parts of the circle of Willis. The internal branch of the common carotid artery ascends, slightly curving, upon the anterior straight muscle of the neck, until it reaches the orifice of the carotid canal, through which it is transmitted to the interior of the skull. During this part of its course it is situated very close to the eustachian tube, a membrano-cartilaginous tube, extending from the middle ear to the back of the fauces, and capable, as you all know, of transmitting sound from one to the other of the parts; but what I would chiefly wish to remind you of is, the manner in which the carotid artery, necessarily following the various flexuosities of the canal, instead of presenting the appearance of a straight vessel, becomes flexuous in its course, and changes its direction at least four or five times before it emerges at the side of the sella tursica. This peculiar disposition of the artery has evidently for its object to diminish the impulse of blood upon so delicate an organ as the brain, and to regulate its supply in the same way (though not so perfectly, for in the human body circumstances do not require it), in the same way, I say, as the rete mirabile prevents the too sudden afflux of blood to the head in certain mammalia. But the mechanism by which this advantage is obtained, gives rise to the sound occasionally heard in the ears; and remark, that this symptom prevails most intensely in plethoric states of the system, when the heart acts with violence, and the energy of the circulating vessels is increased by general or local causes. I do not know that physicians have paid any attention to this bruit, further than regarding it as a sign of determination of blood to the cerebral organ; indeed in many cases it may be just strong enough for the patient to hear it himself, though the physician cannot; however, a medical practitioner in Germany has lately published some cases to prove that inflammation of the brain is always attended with the development of a peculiar bruit in the carotids: he placed the stethoscope on the base of the skull, and found a distinct bruit emanating from the vessels, through which the blood flowe with increased force and rapidity. I hav

sought for this new stethoscopic symptom, but have never succeeded in finding it; however, I see nothing extraordinary in it, nor any reason for not believing that it may exist under the circumstances alluded to. It is a subject that may be followed up with the hope of giving rise to beneficial practical results, and whenever a patient may fall under your care who complains of this noise in the ears, I would recommend you to examine him with care, to note assiduously the minutest circumstances, and to determine, if possible, the physical phenomena either accompanying or giving rise to it. One thing certain is, that the origin of the sound of which I now speak, resides not only in the peculiar disposition of the internal carotid artery at the base of the brain, but is also closely connected with the greater or less degree of energy of the heart's contractions; thus I have had frequent occasion to observe this symptom in patients labouring under active hypertrophy of the ventricles, who were constantly tormented by a loud noise in the ears; and I have also proved that any remedy which diminishes the force of the heart's action, has a corresponding influence upon it, in fact, after one or two bleedings, and when the system commences to feel the effects of strict diet, repose, &c., it generally disappears.

In other cases the bruit of the heart's shock is heard in the arteries, and sometimes is distinguishable even throughout the whole arterial system. Not long ago a case of this kind fell under my care: the patient was affected with continued fever, and there was not a part of the body, in the neighbourhood of any considerable vessel, where the bruit of a shock could not be clearly heard. Even when the stethoscope was placed over the radial artery, we had a distinct shock accompanying each stroke of the pulse. I examined this case with the greatest attention, on account of its novelty, and am certain that the sound thus developed was a real bruit, though, as to its cause or nature, I cannot attempt to give you the slightest explanation; the fact, however, deserves to be recorded: perhaps longer experience and future observations may give us some clue to its cause.

Again, in large aneurysm of the arch of the aorta, or of the pulmonary artery, close to its base, you hear a peculiar sound at each dilatation of the sac, making a third bruit in the precordial region; this pathological bruit is the more distinct and remarkable, in that it separates the two normal bruits from one another.

M. Bouillaud has described another abnormal bruit, to which he has given the strange name of "bruit de diable;" you all know the circular instrument called "diable;" this produces a discordant sound, to which M. Bouillaud has assimilated the bruit he heard in the carotid arteries, and thence gave it the name of bruit de diable. It has never fallen, however, under my observation, and I shall pass it over in silence, rather than hazard an opinion upon what I know nothing of by experience.

There is also another bruit which is sometimes observed in cases of aneurysm, or as a result of an accident which I fear too frequently occurs—viz. the wound of the artery, as well as the vein, in bleeding; this is the sound called, in technical language, "fremissement," and in all probability arises from the vibration of the elastic tissues surrounding the injured part.

Were we to examine carefully the various cases which daily pass before us, either in private or in hospital practice, we should, I venture to affirm, discover several other bruits in the human body which have not as yet attracted the attention of the physician or the surgeon; indeed, there still remain a few to be noticed, but the short time which still remains for the completion of my course, compels me to pass to the consideration of others that are infinitely more important in a practical point of view, afford a wider field for physiological investigation, and, moreover, are of so frequent occurrence, that you cannot set your foot in the wards of any hospital, however small or insignificant, without having abundant opportunity of studying them at your leisure.

The sounds which emanate from the lungs, both in health and disease, afford I say a most important subject of meditation for the physician, chiefly because they are united in the most close and palpable connexion with the healthy or pathological conditions of the organ producing them, and, of necessity, in the same proportion connected with the practice of medicine.

The bruits resulting from the passage of air through the organs contained in the cavity of the chest, are in one respect peculiarly worthy of our attention and strict analysis, because the chest, meaning of course thereby the cavity, its contents, the trachea, and larynx, is a perfect musical instrument, suited, in an admirable manner, for the propagation of sound from the interior to the exterior; indeed I have no doubt whatever, but that by following up or developing the combination of conditions presented by the chest, we might be able to produce a musical instrument, after its model, of the most perfect kind, in the same way as certain

optical instruments are said to have been formed after the model of the human eye, but the subject has never been studied in this point of view.

It is scarcely necessary for me to repeat the convincing arguments we have already advanced to prove that in this part of the body, above all others, the development of sound is merely the result of certain physical conditions which a little attention enables us to seize with facility: let us bestow a few moments on the reconsideration of this part of our subject; it will render the comprehension of what I have to say afterwards upon the pathological sounds of the chest, much more easy.

If we examine the chest as a musical instrument, we shall see that the sonorous part is composed of an elastic tube, which for a short way continues its course undivided, but soon breaks up into a multitude of other tubes, dividing and subdividing infinitely until the whole cavity of the chest is filled as it were with the aggregate of those sonorous conduits; the trachea thus fills the office of what is called the portevent in instruments à anche, for I regard the analogy between the organ of the human voice and instruments à anche, or organ instruments, as most strict and well demonstrated. I cannot agree with my learned confrere and friend M. Savart, who proposes to compare the organ of the voice to the little whistle *(sifflet)* which hunters use when they desire to imitate the voice of certain birds, and which is composed of a little hemispherical base, a few lines in diameter, and pierced on either side by two narrow slits, through which the air is made to pass.

The facts advanced by M. Savart are most ingenious, but I cannot agree with him in comparing the larynx to a bird-call *(reclame)*; on the contrary, the analogy, or, more properly speaking, the resemblance, between the human organ of voice, taken in its whole extent, and instruments à anche, appears to me most evident. Thus I regard the human voice as composed of four distinct parts: and remark how closely the uses of these several parts correspond with those of an instrument à anche. The first is the reservoir of air, formed by the pulmonary vesicles and branches of the tracheal artery. Here it is important to notice how the air in the reservoir is not contained (as is the case in almost all musical instruments) in a single sac or compartment, but is distributed throughout a multitude of little bags and tubes, where it may acquire various physical properties which no doubt have a considerable influence in modifying the quality of the sounds produced. Thus it is not a pure cold air, varying in temperature &c., as in the reservoir of an organ, for example; on the contrary the temperature of the reservoir in the human instrument is always fixed; moreover the air is charged with a certain quantity of humidity resulting from the pulmonary transpiration, and is mixed with a proportion of carbonic acid gas. These peculiarities contribute to give it a great advantage over other instruments of a similar nature.

The reservoir of air in the human organ has also the advantage of being elastic in different ways, another property that modifies its action in a very remarkable manner. The chest, as I have before told you, is composed in great part of elastic tissues; of curved elastic bones, cartilages, and ligaments, which all concur together in the act of expiration, and, consequently, in the formation of sounds. Besides the parts actually entering into the composition of the chest, we have, below, the diaphragm and abdominal muscles acting with considerable energy, so as to attract or expel the air.

In some of my former lectures I spoke to you at length of the innate elasticity of the lung, and of the various important results derived from that physical condition; I should now like to consider the elasticity of that organ quite in a different point of view. Let us begin by once more demonstrating this elasticity in the lung, totally separated from all other influences; here is one which has been removed from the body; the larynx and trachea remain attached to it; I now inflate the organ through the trachea; you see how it is more than doubled in size. When we permit an exit to the air, the lung recovers its original dimensions. Here, Gentlemen, you see an incontestable proof of the elasticity of the lung, for no other influence could have expelled the large quantity of air which we introduced; you can also, I should think, easily conceive how the current of air passing through a vast number of tubes of different calibers, tubes decreasing infinitely in size, and subdividing at various angles,—you can understand, I say, how the body of air must rub against the parietes of the tubes through which it passes, and thus give rise to the development of sound.

This is actually the case; in the living body, if you apply your ear close to the parietes of the chest, you hear most distinctly the respiratory bruit, or, in other words, the sound resulting from the friction of the air against the pulmonary vesicles; even in the naked lung you can hear the sound of which we speak, though not so well or distinctly, because the lung requires to be covered with the parietes of the thorax, in the same way that certain

musical instruments become indistinct, unless their covers be attached to them: however, when I place the end of the stethoscope on the surface of the lung before me, I can make out the respiratory murmur well enough, at each artificial insufflation.

According to the explanation which I have just given to you, the natural respiratory bruit is produced by the friction of the air against the sides of the cells and the extreme bronchial ramifications: hence it follows as a natural consequence, that any affection modifying the condition of those parts, must also modify the nature of the sound resulting from them. Thus, when the cells are obliterated, there should manifestly be an absence of the respiratory murmur, and this experience shows us to be the case. We have every day examples of patients in whom the air is prevented from freely entering and distending the lungs, by various effusions in the cavity of the chest, or by the effect of inflammation which has caused an actual consolidation of the vesicles; in all these cases we do not hear the bruit respiratoire, but in its place we find a pathological bruit, more or less distinct and loud, the "soufflet bronchique," as it is called. This latter must evidently be attributed to the passage of air rubbing against the parietes of a large tube, or one at least possessing certain dimensions. The proof is, we never hear it except in cases where the air is prevented from entering freely into the interior of the pulmonary vesicles; the cause of this bruit is thus well known, and it is easy to give a physical explanation of it. Indeed, even in the healthy condition of the lungs, we have always a phenomenon somewhat analogous to the one just spoken of. If you take a living animal, or a man, and listen attentively to the passage of the air from the upper part of the lung, or from the larynx into the trachea, you will almost always be able to distinguish a particular sound, quite different from the respiratory murmur: it is a dull heavy sound, and arises from the frottement of the air as it enters the trachea, either at its upper or its lower extremity: hence, when much exaggerated, it is called "soufflet tracheale."

But let us return to the mechanism of the voice. We have already spoken of the reservoir: the three other parts are the *portevent*; the *anche* itself; and the *porte-voix*. In every instrument à anche we should distinguish two parts whose uses are quite different; one is the body, or tube, for the transmission of the air; the other is the true anche, composed in all cases of elastic plates, capable of vibrating rapidly, and forming a narrow slit through which the air is permitted to pass freely, or is arrested at will; this is the essence of every anche, and the vibration of the elastic plate or plates (as for example the reed of the clarionet) produces the sound.

In the larynx we find an instrument exactly of this description, and of the most perfect kind; its mechanism is such that the air may enter freely at one moment, and be suddenly and completely arrested at the next; various cases of sudden death from interrupted respiration attest this action of the larynx; the form of the glottis and the two elastic folds which circumscribe it on either side, resemble as closely as possible the slit of certain reed instruments; the aperture of the glottis is capable of being enlarged or diminished in an immense variety of degrees. If you examine the larynx of a living animal during the production of the voice, as I have done, by making an incision between the os hyoides and the thyroid cartilage, you will obtain a perfect idea of the motions of the glottis, and you will, moreover, see how the varied tones of the human voice (for the structure of the larynx in the dog is sufficiently similar to that of the human subject to allow the assertion) are connected with the variations in the extent of the opening and the quantity of the elastic plate which vibrates; besides, you may prove, by direct experiment, that whenever the muscles which are destined to regulate the motions of the glottis cease to work with proper energy, the voice is lost.

The human voice, then, is certainly *an anche*, but one infinitely superior to any that the art of man has, or probably ever will produce; for the essential part of the instrument is composed of a double elastic plate, vibrating under a thousand changes, and capable, in consequence, of giving rise to infinite modifications of sound; it is produced by a living mechanism, composed of various contractile bands, each one of which is endowed with a range of contractility which no human art can supply, and thus generating a series of changes in the voice, which human art can never imitate. The larynx produces two kinds of sounds; one is called the voice, the other is merely the result of the passage of air through the glottis, when the elastic plates no longer act; it is a mere soufflet, but fortunately is capable of supplying the voice, when this latter has been lost. Thus you all know the case of a distinguished professor in the University, who continued to fill his chair to the satisfaction of the pupils, although he had completely lost the voice, properly so called, and nothing remained but a kind of soufflet, from the air passing through an

undeviating orifice. On the second sound or "bruit vocal," as physiologists call it, I shall not dwell, because, though presenting many phenomena of the most interesting kind, it is not directly connected with our present subject.

At our next meeting I will follow up the question of the human voice, considered as a musical instrument, and show under what circumstances the bruits of the trachea and larynx are modified or altered.

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## CLINICAL LECTURE ON SURGERY

DELIVERED BY

## BARON DUPUYTREN,

*During the Session of* 1834, *at the*

*HOTEL DIEU, PARIS.*

Revised (before translation) by the Baron himself in the fasciculi of his "Lecons Orales de Clinique Chirurgicale," published periodically by G. Baillière, Paris.

### ON WOUNDS OF THE HEART,—THEIR VARIETIES, CAUSES, SYMPTOMS, AND TREATMENT: AND ON MUTILATION OF THE GENITALS.

A few years ago it was considered as a fact placed beyond any doubt that wounds of the heart were necessarily mortal, and various theses were presented to the Faculty of Medicine on the inevitable and instantaneous mortality of these injuries. Even at present, in spite of the number of facts and observations collected at the *Hotel Dieu*, and in other hospitals, the contrary opinion is far from being generally admitted; yet it is a fact well established by the examination of the body after death, that wounds of the substance of the heart are not beyond a chance of cure, however deeply they may have penetrated, or whatever be the cavity of which the parietes are injured. We need not go far to seek for proofs of this assertion; balls, or manifest cicatrices, have been found in the hearts of animals killed in the chase; individuals presenting all the rational symptoms of wounds of the heart have been perfectly cured; and, finally, who can forget the case of the soldier in whom, six years after the cure of his wound, was found a ball imbedded near the apex of the heart in the substance of the right ventricle, and in part covered by the pericardium? Hence all well-instructed surgeons of the present day admit that penetrating wounds of the auricles or ventricles, if they be small, so far from being of necessity instantaneously mortal, may even admit of a cure.

Wounds of the heart from a pointed instrument come particularly under this head, as we may conclude from acupuncture of the heart, which was tried so often at Warsaw during the time of the cholera, without any effect on the disease, but at the same time without any injury to the patient. In this operation the delicate point of the instrument separates, and distends the fibres of the tissues, without occasioning much pain, or any solution of continuity; hence, when it is withdrawn, the parts return to their natural state, the opening closes, and not a drop of blood is lost. It is not, therefore, surprising that a simple prick of the heart is susceptible of cure; but we can conceive that a fortunate result can seldom take place when the wound is made by a pointed cutting instrument, or by a cutting one alone, which must practise an opening more or less large, in penetrating to the cavities of the heart. Whenever the wound is of any size, as for example a few lines, either in the auricle or the ventricle, it becomes instantly the cause of death, from the quantity of blood poured into the cavity of the chest at the moment of the wound. Some facts, however, prove that death may not be so instantaneous as is commonly imagined.

The following case is of additional value, as it shows how the patient was cured of a wound of the heart, which was not recognised during life, and was only discovered after the death of the patient, produced by another affection:—

Case 1.—*Stabs in the Heart and Stomach proceeding to a Cure, complicated with fatal affection of the Brain.*

Geray, thirty-four years of age, by profession a metal founder, generally enjoying good health, was brought to the *Hotel Dieu* on the 5th of November 1831, to undergo treatment for various wounds which he had received. From our inquiries into the history of the accident, we learned that he had visited his mistress the day before in a state bordering upon intoxication, and engaged in a quarrel with some individual whom he met there, during which Geray received two stabs of a knife, one in the belly, the other in the chest. Although severely wounded, he was able to walk and defend himself for sometime, but at length he fainted, and vomited occasionally, without throwing up any blood; the wound of the chest, on the contrary, furnished a great quantity of this fluid. On the patient's arrival at the *Hotel Dieu*, the existence of the two

wounds in the chest and abdomen was immediately recognised; his face was pale, sunken, and agitated; the whole surface of the body was colourless; the pulse regular and extremely feeble; the pulsation of the heart was also regular, but almost imperceptible; there was a general spasmodic trembling of the body, yet the feebleness of the patient seemed rather the effect of some nervous affection, than of the loss of a considerable quantity of blood. Each wound was about six or seven lines in length; they were situated, one at the base of the chest on the left side, between the fourth and fifth ribs; the other three or four fingers' breadth above the umbilicus on the same side; the first was perpendicular to the direction of the ribs, and increased a little on the inferior edge of the cartilage of the fourth; the second wound was nearly transverse; they both appeared to have been made by a cut and thrust instrument of some kind. The wound on the chest still bled a little, and there was no symptom of its having penetrated into the cavity; the whole of the left side was sonorous, the respiration even and regular; there was no cough or spitting of blood; the wound of the abdomen did not give issue to any solid, liquid, or gaseous matter; the belly was soft, although the patient had not been to stool for some time, and there did not exist the slightest sign of effusion into the chest. The pain caused by the wounds was very slight, and the patient was quite tranquil. *Dyachylon plaster to the wounds; Wine and water for drink.*

On the 6th the abdomen and chest remained in the same state; the skin was warm, and the pulse a little more developed. *Bleeding to eight ounces.* In the evening his mistress came to see him, and her visit agitated the patient considerably.

7. Wounds in the same state; the skin hot; and the pulse a little accelerated. *Bleeding to eight ounces.* The blood was drawn at half-past nine o'clock, and at eleven symptoms of congestion towards the brain manifested themselves; there was loss of consciousness; great agitation and convulsive motion of all the muscles of the left side of the body. Sensation and voluntary motion were also lost, though some slight trace of both remained in the left lower extremity. The mouth was turned to the left side, and the tongue projected from the mouth, and also deviated to the left side. There was a tendency to somnolence, but the patient answered correctly when spoken to. He complained of some pain in the head. *Sinapisms to the feet; Anodyne draught.*

On the 8th he remained in the same state. *Cupping behind the ears; vegetable broth.*

9. The patient does not complain of his head until his attention is drawn to it. If, when one eye is shut, an object be presented before the opposite one, it is observed that the left eye has much less power of vision than the right. He has not yet had an evacuation; the wounds look healthy; the chest is sonorous on the left side, and when the stethoscope is applied near the wound, it seems to the ear as if the air had to overcome some obstacle in filling the chest, and was precipitated rapidly into a cavity. The pulsation of the heart remains regular, and the general state of the patient is the same as on former days. *Cupping behind the ears; Purgative clyster.*

10. There is no amelioration of the cerebral symptoms; sensation and motion are more perfect in the left lower extremity; the pulse regular but frequent; no stool; respiration the same as on former days. *Vegetable broth, with Sulph. Soda; Sinapisms to the feet; Purgative clyster.* In the evening all the symptoms became aggravated, with congestion of the brain and violent agitation; the pulse was regular but very frequent; and the heart beat strongly and regularly. *Fifteen leeches behind the ears; Sinapisms to the feet.*

11. The muscles of the neck and back have become stiff; those of the paralysed parts, on the contrary, are flaccid; the circulatory system presents the same state as yesterday. *Purgative lavement; broth, with Sulphate of Soda and one grain of Tartar Emetic.*

12. The medicine has produced a good many stools, but the bladder does not act; convulsive motion of the lips every now and then; the memory remains perfect, and the patient answers all questions correctly but very slowly. The face is altered and has become dark-coloured; signs of congestion in the chest; and the pulse has commenced to beat irregularly. For the two last days the patient has complained of pain in the back and posterior part of the neck, where the muscles are extremely stiff. *Barley-water with Gum; Seton in the neck.* In the evening the congestion in the chest became more marked; the countenance more altered; the pulse thready; and, finally, the patient died on the 13th at eight o'clock in the morning.

*Necropsy.* — *Abdomen.* — A transverse wound of six or seven lines in length existed about three inches to the left of the umbilicus; there was a slight effusion

of blood into the cellular tissue which unites the peritoneum to the abdominal parietes. The stomach, which lay concealed beneath the false ribs, had been penetrated near its great curve by a wound two lines in length; the edges of this wound were nearly in contact, and partly closed up by mucus; the organ itself was not inflamed, and did not contain any blood. There was no effusion into the cavity of the peritoneum, which latter was perfectly healthy. *Thorax*:—There was a wound six or seven lines in length, perfectly similar in form to that of the abdomen, situate between the fourth and fifth left ribs; the sub-serous cellular tissue near the wound, as well as the left side of the mediastinum, contained a good deal of extravasated blood. The cavity of the chest contained about four ounces of blood; the intercostal artery which passes along the lower edge of the fourth rib had been wounded, and supplied the blood found in the left pleura. The pericardium was penetrated by a wound three and a half lines in extent; and the heart had also been wounded near the middle line, a little to the right of the left ventricle, into the cavity of which the instrument had passed, making a transverse cut, which bore some resemblance to a bow; it was three lines and a half in length by a line in height. The external fibres were much more separated than the internal ones, and the separation gradually diminished towards the cavity of the ventricle, so that the most internal were in contact with each other, and closed the wound. The cavity of the pericardium contained about an ounce of serum. *Brain*:—The arachnoid membrane was very dry. There existed a slight but sensible depression on the middle of the right hemisphere, where there appeared several points of ramollissement, with some injection of the white substance. The spinal marrow was quite healthy.

*Remarks.*—The case which you have just heard, proves that wounds of the heart, although excessively dangerous, yet offer some chances of cure. In connexion with legal medicine, it also gives rise to several important reflections. It results from an examination of the facts, 1st. That the wound of the abdomen, which had penetrated through the abdominal parietes to the cavity of the stomach, was produced by a pointed and cutting instrument. 2nd. That the wound of the chest, made by a similar weapon, had traversed the parietes of the chest, divided the intercostal artery, injured the pericardium and heart, and gave rise to an effusion of blood into the left pleura. 3rd. That the brain was slightly softened. 4th. Finally, that these wounds, which one would imagine ought to have been instantaneously mortal, did not prevent the patient from living for eight days, and might, perhaps, have been susceptible of a cure, had they not been complicated with a dangerous affection of the brain.

You see, therefore, that wounds of the heart are not, as has been said, instantly mortal; however, in considering the possibility or impossibility of a cure, we must take into account the depth to which the instrument has penetrated; the direction of the wound with relation to the fibres which are injured, and the parietes of the part; the extent of the wound; the form of the instrument which has produced it; and the presence of foreign bodies &c. in the wound. We shall enter into a few details on these different points.

Wounds of the heart vary according to their extent and seat; they may be superficial or deep, the first involving only a portion of the substance of the heart, the latter penetrating into its cavity. There are cases on record of wounds which have penetrated several cavities at the same time. The direction of the wound may be transverse to that of the greatest number of fibres, or may intersect them in various degrees of obliquity; hence arise the different tendencies of such wounds to form an hiatus. When an instrument has divided transversely a great number of fibres, the opening will be larger, and the tendency to the effusion of blood must be greater than when the wound is made parallel to the same fibres. But as the heart is composed of different layers of fibres of different directions, it is evident, that in case of a wound penetrating to one of its cavities, if one set of fibres tend to separate the edges of the wound, another set will tend to bring them together. Thus, for example, let us suppose a wound passing obliquely into the cavity of the left ventricle from the median line; this will divide the three layers of fibres which compose the ventricle: the superficial and middle layers are directed downwards and to the left side; the deep layer, much thicker than the other two, crosses them from left to right; the instrument, then, will cut transversely the fibres of the deep layer, while it merely separates those of the superficial and middle; hence the extent of the opening will be much diminished, an obstacle to effusion of blood created, and the wound will be closed at first in a temporary manner, and, finally, afterwards permanently.

The extent of the wound must also influence its chances of obliteration; it de-

pends, of course, on the form and size of the weapon, and on the strength with which it is impelled. Thus the wound is rounded when made by a bullet; linear when the cutting instrument is not thick; or ragged, if occasioned by an angular and irregular body. Any part of the heart may be wounded, but the left cavities are less exposed than the right, and the right ventricle more commonly than its corresponding auricle. The aortic ventricle is also more exposed to injury than the pulmonary. Anatomy explains these differences; sometimes the wound takes place in the groove where the coronary artery is lodged, and gives rise to very dangerous hemorrhage. From the thickness of the parietes of the left ventricle, this latter is less subject to injury than any other of the cardiac cavities, and the edges of wounds in this portion of the heart have a greater tendency to close on each other.

Wounds of the heart may be complicated by several accidents which do not of necessity belong to them; as, for example, the division of an intercostal artery or some large vessel; an extensive opening in the parietes of the chest; a wound of the lung, the diaphragm, the abdominal viscera, &c. We should also take into account the moral state of the patient at the moment he was wounded, his age and general health. We cannot at the same time doubt that wounds affecting the substance of the heart are, in general, extremely dangerous. To arrive at this conclusion, we have only to look at the consequences of these wounds, or the circumstances with which they are complicated. Amongst these accidents we find hemorrhage as the chief, either primary or secondary, derived from the cavities of the heart, its superficial vessels, or from some of the trunks which supply the chest or its parietes; inflammation of the heart or pericardium, and other organs; sudden suspension of pulsation in the heart. But however dangerous these accidents may be, it is not the less certain, that in many cases they do not cause instantaneous death; that in others they may be overlooked or mistaken, and that in some circumstances they are susceptible of a cure. I have already related to you one remarkable case, to which I can add many others from the practice of this hospital.

CASE 2.—*Treated for Suicidal Amputation of the Penis, ending fatally from Cerebral Disease, and disclosing, after Death, numerous closed Wounds of the Heart.*

A man, forty years of age, tall, and of a sombre expression of countenance, being reduced to a state of distress, in consequence of his own misconduct, resolved to destroy himself: on one occasion his project was disturbed as he walked towards the river for that purpose; he was then thrown into prison for some crime, and fancying that he was altogether lost to the world, he possessed himself of an old knife and amputated the penis close to its root; although the instrument was very blunt, he used such force and perseverance, that the section was complete, upon which he threw the amputated portion into the privy: there was very little hemorrhage. It was soon noticed that the prisoner grew pale and lost blood every day, and he was brought to the *Hotel Dieu*. Six ligatures were applied to the dorsal, bulbous, and cavernous arteries; a large catheter was placed in the urethra, and the wound dressed simply. The patient was watched with great attention, for his present state of tranquillity might be only temporary, and it was our duty to guard against any new attempt at suicide. He passed some days in this quiet state, but delirium soon came on; the patient got up in the dark, tore off all his dressings, and ran about the ward during the night. (*Bleeding from the foot; Anodyne lavement; Laxative draught.*) The delirium continued, the face sunk, and the patient's strength gave way rapidly. The urine, which flowed between the urethra and catheter, was charged with purulent mucus; but the wounded parts showed a disposition to cicatrize; the pulse was slow, the extremities cold, respiration free; there was no cough or expectoration. The symptoms of cerebral excitement increased during the three last days, and the patient died in a sub-apoplectic state, three weeks after his mutilation.

*Necropsy.*—The membranes of the brain were gorged with blood and serum; the brain itself was much injected and very hard. When we raised up the sternum, a large ecchymosis was seen at the pericardium, which cavity was half filled with liquid blood: in seeking the source of this hemorrhage, we discovered several small wounds, each closed with a black fibrinous clot, on the anterior surface of the ventricles. The truth was now suspected, and an attentive examination did not leave the least doubt of the origin of these wounds. In the centre of the ecchymosis which occupied the anterior superior part of the pericardium, we found two small penetrating wounds, obliterated by false membranes: again, on examining the anterior wall of the chest we discovered, between the cartilages of the second and third left ribs, a cicatrix of a small wound; it was nearly round, and was not more than a line and

a half in diameter: beneath the skin, between the intercostal muscles and pleura, was a large spot of ecchymosis extending forwards and downwards. The opening into the pleura was marked by a brown red spot surrounded by false membrane: the anterior edge of the lung had not been touched. The heart was wounded in five or six different points, the greater number in the right ventricle, clearly penetrating into its cavity: one wound had sunk into the septum, another had reached the left ventricle without penetrating it. The substance of the heart was pale, and gave way easily under the fingers: the ventricles contained a few dark fibrous clots. The whole gastro-intestinal mucous surface was the seat of a chronic inflammation, and there were several old ulcers about the ileo-cæcal valve. The liver, spleen, and kidneys, were healthy. The previous history of the case was now inquired into, and we discovered that when the patient had mutilated himself at the police office, they found on his person, besides the knife, a long needle, commonly used by workmen of his profession: this was taken away, and since that time he could have had no instrument of the kind. Hence it may be concluded that the attempt at suicide was made at least twenty-five days before his death: the state of the external cicatrix also corroborated this opinion. The fine sharp instrument had been driven vertically upon the heart, and when it arrived at that organ, it had penetrated the substance in several points, as was proved by the number of wounds: the narrowness of the openings occasioned by the needle, had not given rise to any hemorrhage; that is, the blood contained in the right ventricle was not effused into the pericardium: the small quantity of blood (about three ounces) found there, seems to have escaped from the substance of the heart. In this case the pulse of the patient, though examined every day, never presented any remarkable anomaly: the region of the heart was not the seat of any pulsation or extraordinary sound; there was not any fainting, dyspnœa, or, in a word, any symptom which could lead us to suspect any injury of so important a viscus.

*Remarks.*—This observation is not only remarkable on account of the length of time which elapsed from the time of the wound to the death of the patient; but it gives rise to several reflections connected with the peculiar mutilation which the unfortunate man inflicted on himself. Although these are not exactly connected with the present subject, I shall take this opportunity of making some practical observations on the point.

*Voluntary Mutilation of the Genital Organs*, is an accident which we have often occasion to see: it constitutes a very curious variety of suicidal monomania. Individuals who attempt to destroy themselves in this manner, are generally of an amatory temperament; the predominance acquired by the genital system affects the intellect, and the patient imagines that a severe wound cannot be inflicted on those organs without extinguishing life. All authors who have written upon madness, speak of these mutilations, and regard them as little dangerous in themselves; but individuals in this state require the greatest watchfulness on the part of the attendants; in fact they generally succeed in destroying themselves afterwards: we have to apprehend an explosion of mania in which sanguinary ideas may occasion the most dreadful consequences; we have seen several of these patients turn upon others the fury of which they themselves had been the first victims. One would imagine they have no sensation of pain; an old knife, the blade of which saws rather than cuts, must produce horrible agony, but nothing stops them. The lacerated arteries bleed little; they are closed by the contraction of the skin and corpora cavernosa, or the hemorrhage is arrested by syncope; and in a great number of cases a spontaneous cure takes place.

These wounds do not always include the same parts, are of the same extent; sometimes the scrotum is the seat of injury, and one or two testicles are removed; sometimes the penis is cut off more or less completely, at various distances from the root; finally, in some cases the whole genital apparatus is swept away.

I once saw a man of middle age, who had been reduced to despair by the ill-conduct of his daughter: he made a large incision along the base of the scrotum and penis, which he detached for two-thirds of their thickness; the divided parts were united by sutures and healed, but the corpora cavernosa were obliterated at the point of division. The patient was cured of his wound and mental affection, but ever afterwards presented the singular phenomenon of a semilateral erection, which gave the penis a form extremely bizarre.

I also remember the case of a young boy, half idiot, in whom the corpora cavernosa were completely obliterated at the middle; he amused himself one day by placing a very tight ligature round the middle of his penis, which remained there for fifteen days; the skin of the penis and the urethra became gangrenous; an artificial opening was formed, and the posterior portion of the corpora cavernosa, being alone permeable to the blood, alone entered into erection.

The depressing passions, and chiefly jealousy, are often the cause of these mutilations. An old man married to a young giddy girl, thought that her conduct was not exactly correct; he resolved to destroy himself, and completely amputated both testicles, with their integuments; he was cured, but drowned himself in a short time afterwards.

It is not easy to conceive by what aberration of intellect an unhappy jealous man can deprive himself voluntarily of virility. There is in this strange resolution a mystery of the human heart to puzzle moralists. Does it arise from injured pride? Is it a punishment voluntarily inflicted through remorse, and sustained as the expiation of faults which a weak mind exaggerates? We leave the question to those who have the care of the soul, and pass to other matters. The depressing passions are not always the cause of this mutilation.

A great German shoemaker, with a stupid face, and intellect certainly weakened, frequently experienced an access of the venereal orgasm, during which he mutilated the scrotum. Several deep scars indicated very extensive wounds; but not being satisfied with the results which he obtained, and more especially with being his own executioner, he soon found an assistant to satisfy his intentions. A prostitute, seizing the moment of the venereal spasm, divided the scrotum with a sharp knife, and removed the testicle in a very dexterous manner. The wounded man scarcely perceived his loss, such was the ecstasy in which he lay plunged; but on the appearance of hemorrhage he was brought to the *Hôtel Dieu* where with a simple dressing the wound was soon healed.

We might multiply examples of these wounds, inflicted under various circumstances; what has been said, however, is sufficient to prove that they are in general of little consequence; the individuals seem in these cases gifted with a degree of insensibility which becomes a real obstacle to the development of inflammation. We now resume our original subject, with an observation, which bears some resemblance to the preceding, and is still more interesting.

CASE 3.—*Three Penetrating Wounds of the Heart, progressing to a Cure, terminating fatally from effusion around the Lung, the result of Mental Re-excitement.*

A man, about thirty years of age, driven to despair by misfortune, resolved upon destroying himself. For this purpose he procured a file, sharpened the point and inflicted with it five or six wounds, mostly about the precordial region. The wounded man discharged blood from the mouth, and a great quantity flowed from the wounds. When brought to the *Hotel Dieu* on the 8th of March 1832, we remarked that a good deal of air also escaped from the same orifices, proving in the clearest manner that the weapon had penetrated into the cavity of the chest. The respiration was very short and feeble, the pulse small, irregular, and the patient so weak that it was out of the question to bleed him; but when his strength was recovered a little, venesection was practised, and repeated each time that the symptoms became worse.

Thirty-six hours after the accident, we noticed a remarkable phenomenon; the patient commenced to expectorate thick spittle mixed with blood and pus. It was now judged necessary to dress the wound, both to avoid the introduction of air, and to arrest the hemorrhage; this practice was conformable with the principles laid down by several surgeons for the last fifteen or twenty years, and especially by M. LARREY. The respiration did not seem to suffer from the means employed, but the state of the patient appeared rather improved. However, dangerous symptoms soon came on, and the patient died on the 11th of March, three days after his attempt at suicide. The danger of his position had never been concealed from us, but the fatal termination was certainly hastened by a visit which his mistress paid him, and by the interrogatories of the police magistrate; in fact, about three hours after these two visits, the state of the patient became rapidly worse, and he soon expired.

*Necropsy.*—I have brought the injured parts here, and will proceed to examine them before you; here are the integuments covering the precordial region, and you will readily see the marks of five triangular wounds. From the history which the patient gave us the file had a triangular form also, but you should not forget at the same time that a round instrument may produce a triangular wound. This, which is a new fact in legal medicine, should always be remembered by medical men, when they give evidence on cases of this kind. Continuing the examination, we found two wounds above the breast, and three below it. They are all regular with the exception of one, which proves that they had been made each by a single stroke. You should, however, remember that some individuals possessed by the demon of suicide, after having plunged a weapon into the body, turn it about in all directions,

and thus give an irregular form to the wound, or sometimes withdraw it, and again pierce the organ, so as to make a greater number of wounds internally than externally. In the present instance the uppermost wound seems to have been made with more violence than any of the others, for it divided one of the ribs; another penetrated between the intercostal spaces, and gave rise to a considerable extravasation of blood within the cavity of the pleura. The right side of the chest contains air and dark-coloured blood, partly coagulated and partly liquid; the whole quantity, if we reckon what was lost by the wound, may be estimated at three or four pints. This blood would certainly have found its way to the exterior had we left the wound open, instead of closing it by dressings. The lung, compressed on all sides, as in cases of empyema, was no longer permeable to air. The left side of the pericardium is pierced, as you see, in three or four points, and contained about a spoonful of blood and pus resulting from inflammation. The instrument had also injured the left ventricle in three different places, and all these wounds had penetrated into its cavity. Is the lung on the left side also injured? I have no doubt of it, but, to be sure, we will proceed to inflate it. You see that air escapes from three distinct points, and that these correspond exactly with the wounds of the thorax. The right ventricle contains a little dark-clotted blood, but does not present the least trace of a wound. We will now divide the left ventricle longitudinally, and look on the inside for the wounds corresponding with the external marks; but nothing is more difficult than to distinguish the wounds in these cases, for the point of the instrument may have struck on some of the carneæ columnæ which line the cavity in such numbers; however, as we examine the interior of the ventricle, we find a small clot of blood adhering to it, which has evidently been formed during life; and, as you see, a stylet passes from the external orifice, and shows how the clot closes a small wound; the same thing takes place in two other points.

*Remarks.*—These different lesions, and the marks of inflammation of the pleuræ, sufficiently account for the patient's death; but here a question arises,—whence came the blood which flowed from the wound, and which we found in the chest? It was furnished not by the lung, but by an intercostal artery which was opened. The case just related is a new proof that wounds of the heart are not necessarily mortal; the patient, in fact, lived seventy-two hours after having received three penetrating wounds of the organ, and the two preceding observations show that life may be prolonged much longer. In addition to these I might quote a number of other cases to prove that individuals affected with wounds which penetrate the whole thickness of the right ventricle, may live two, three, four, five, six, eight, or fourteen days; other observations, not less curious, which you find in the thesis of M. Sanson, show how some patients wounded in the left ventricle die within five hours, while others, in whom both ventricles were injured, survived for five, or even twenty days. In the presence of facts so numerous and well authenticated, we cannot refuse to acknowledge that wounds of the heart are not necessarily mortal. The case of the soldier of whom I spoke in the commencement of the lecture is still more conclusive; because it leaves no doubt of the possibility of their being cured.

The symptoms of wounds interesting the heart are not all of the same importance; some are very uncertain, others more characteristic; the appearance of the precordial region ought to fix our attention in the first instance; if there be any wound in this part, we have reason to be anxious, and still more so when symptoms of hemorrhage set in, as general weakness, fainting, smallness of the pulse, general paleness, cold extremities, cold sweats, vomiting, anxiety, oppression, and the sensation of extreme weight about the diaphragm. Writers have also enumerated amongst the signs of wounds of the heart, a peculiar trembling of the organ, weakness of the arteries, inequality and feebleness of the pulse, excessive fever, crepitation, and a peculiar bruit. The diagnosis of these injuries is extremely difficult, because the symptoms are rarely united together in sufficient number; and this uncertainty has led us perhaps to overlook many cases of cure in wounds of the heart.

The treatment is the same as for all deep wounds of the chest accompanied by lesion of some of the large vessels; viz., bleeding, repose, simple dressing to the wound, so as to arrest the hemorrhage and prevent the entrance of air; the patient's drink should be slightly acidulated. The bleeding must be graduated, and repeated according to the strength of the patient and the difficulty of respiration; venesection diminishes the mass of blood, and combats inflammation of the pericardium, heart, or other injured organs. We can readily conceive the necessity for observing strict repose: it is also of some importance to close the external

opening in a proper manner, so as to arrest the flow of blood externally, and check internal hemorrhage; however great the symptoms of oppression may be, we should never permit the blood to flow externally, unless indeed the patient be threatened with immediate suffocation: in this dangerous emergency, we must let a little blood escape in order that the patient may breathe; but it is important to remember that the external orifice should never be opened until the internal hemorrhage is arrested, which is shown by the return of heat and colour to the external surface: up to this period any operation would be useless, nay injurious; for the evacuation of the blood accumulated in the chest would be calculated to give rise to fresh hemorrhage. Finally, the action of cold may be employed, and made as general as possible. Cupping-glasses, especially when employed over the wound, should be avoided; repeated bleeding is much inferior to cupping, and the application of the glass over the wound would certainly bring on the hemorrhage. It has been recommended to give such medicines as are proper to diminish the pulsations of the heart, as belladonna, digitalis; they may be useful, but I fear they will be found insufficient; whenever any complication exists, it must be treated in the same general manner.

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# CLINICAL SURGERY.

## LECTURES

DELIVERED AT THE

*NORTH LONDON HOSPITAL,*

BY

ROBERT LISTON, Esq.,

Surgeon to the Hospital, and Professor of Clinical Surgery in the University of London.

## LECTURE VIII.

### ABSCESS NEAR THE ANUS.—FISTULA IN ANO.

As a consequence of most of those diseased states of the extremity of the bowel which I have brought under your notice lately, induration of the cellular tissue takes place to some extent, and this, in many instances, is followed by the secretion of purulent matter. Induration may for some time precede the formation of abscess, and the purulent deposit may be of the cold or chronic kind; or, again, the action preceding it is vivid, and, in an inconceivably short period, signs appear of suppuration having taken place. This region is the seat also of carbuncle of an acute or chronic kind, of what has been termed gangrenous abscess,—a disease which is always fraught with much mischief and danger, and one which requires energetic treatment of the general and local kind. The complicated case which is under the care of my friend Mr. Cooper, in one of the private wards, appears to me to have had its origin in such a state of the cellular tissue.

Abscess near the verge of the anus may be traced to injury from within or from without. It is occasionally attributable to the impulse communicated to the parts in those who labour under affections of the chest, accompanied by harassing cough, and has, frequently, anything but a prejudicial effect on the primary affection. The most common, immediate, and exciting cause, is an inflammatory attack of hemorrhoidal tumours. This may be attributable to a variety of circumstances. Irregular living, disordered bowels, exposure to cold and moisture. The patient, subject to piles, has sat down, perhaps, on the wet grass, after violent exertion, or he has travelled far in bad weather in the erect position, without an opportunity of emptying the bowels, on the top of a coach, seated on wet straw. He is soon after seized with shivering, with swelling, and pain about the fundament. He has a smart attack of fever, and in a very short time thereafter an abscess is discovered. Now in this situation, as in many others, you are not to look quietly on, and wait for the signs of the formation of matter, as described in surgical works. The thickening, the swelling, the redness and fluctuation: "Tumor albescens, mollis fluctans, pruriens," a good description of a pimple on the face, certainly not of an acute abscess, unless managed in a slovenly way. Your patient will, all the while, be suffering the most tormenting and violent pain. You look to the history of the case, the duration of the symptoms; you know that pus may be formed and bounded by a cyst, and that a depôt of matter may, in fact, be established within forty-eight hours, or less. Your object is to give instant relief; to free the patient from his burning fever, his intense suffering. You examine by the side of the anus, where perhaps you discover a tender part, which feels like the point of one's finger. It passes deeply, a firm band, by the side of the bowel. From that, if you pass a narrow bistoury carefully, you will permit to escape much more well-digested purulent secretion of a most unsavoury odour than you could

possibly imagine it would contain, and with inconceivable relief to the patient. You thus strike at once at the root of the evil. At this stage of the disease, and after the mischief can no longer be warded off, a most absurd and inefficient practice is very often pursued. The parts are treated to a succession of cold or hot lotions, as may be in accordance with the prevailing theory of the practitioner. Leeches are applied and reapplied, of course with no relief to the sufferings of the patient. I have seen this practice persisted in until the matter was about to burst its coverings,—in fact, until it was almost about to ooze through the leech-bites. I leave you to judge which practice is the most likely to shorten the duration of the disease, and of the constitutional disturbance arising therefrom. By proceeding as I have indicated, and giving vent to the contents of the abscess at an early period, *and by this proceeding only*, can the establishment of that vile and troublesome disease, *fistula in ano*, and the further use of cutting instruments, be avoided. Suppurating cavities in this part do not fill up, nor do their parietes coalesce readily. This depends on several circumstances. The abscess has formed amongst a quantity of cellular tissue, loaded with fatty matter, and possessing little vitality. The abscess has, in a great many instances, opened a communication with the bowel, and the passage of fluid fæcal matter in many of these cases, and of flatus, must interfere materially with any healthy action. The parts are never long at rest. Even the emptying of the urinary bladder must, so far, affect them.

But, above all, the one side of the abscess is stationary, while the other is frequently in motion. This simple circumstance explains the difficulty,—often almost insurmountable,—of bringing about the filling up, and the healing, of the cavity of an abscess. In the iliac fossa, under the sternum, and under the cranium, such unmanageable cavities are found. To illustrate this position, let me direct your attention to the preparation before you from my museum, and to the history attached to it.

"(*I* 2.) A large irregular cicatrix on vertex; the integuments of the head forming the margins of the cicatrix, adhere to firm ligamentous matter, which supplies a deficiency in the cranium, and to which the dura mater is firmly attached. The patient was a boy, aged eleven years. He had received a blow on the vertex. A puffy tumour formed and was opened. He became subject to fits, and was relieved by the evacuation of matter from the wound. Exfoliation of the cranium occurred, with a collection of purulent matter between the dura mater and the skull-cap. The dura mater granulated kindly, and the bone was quite alive and sound, but, owing to the constant motion of one side of the cavity, no union could take place. A portion of the cranial bones, extensively detached from the dura mater, was removed by the trephine and cutting plyers, on which the dura mater rapidly united with the integuments of the head. Some time afterwards (twelve or fourteen months) the patient complained of pain in the back of the neck. An abscess formed, pointing under the right scapula, and was opened. Weakness of the inferior extremities and of the right arm suddenly supervened, and the patient died. The cervical portion of the spinal chord was found much softened, with infiltration of purulent matter into its substance."

I put this preparation and the account of it before you, in order to encourage you to visit the collection, the specimens in which it will give me at all times great pleasure to explain. By opening the abscess in the neighbourhood of the anus, freely, as I have already said, and at an early period, before the bowel has been involved, has become denuded or perforated, there is a chance of a cure taking place rapidly, and without the necessity for resorting to any further operative procedure. Such fortunate events are rather rare. It is not often that the patient applies in time, or, when he does, that effectual means are taken to promote a speedy cure. I could give you, however, the particulars of a few cases in which the practice was successful.

More frequently, and for reasons already fully given, the cavity in which the matter was lodged, after its spontaneous or artificial evacuation, contracts throughout its extent to a certain degree. It continues to discharge, at first in considerable quantity. In time this becomes inconsiderable, the sensibility of the parts abates, and a little hardness only remains, leading from a papilla in the courses of the track. A *fistula* is established, "a sinuous, narrow, callous, and, not seldom, imperceivable ulcer," as Ambrose Parè describes it. It is lined internally by a secreting membrane, and varies in its depth and extent. Collateral tracks often exist, branching off to the perineum or buttock, remains of the original cavity or the result of more recent collections which have burst into the main sinus.

In the greater number of cases the matter has approached the coats of the bowel. The ulcerative process has been set up for the escape of the contents of the "phyma," as the ancients name the

collection here, in that direction; the bowel has been perforated, and slight discharge may have been observed before the matter has been permitted to escape externally; or the process may still go on after the partial evacuation of the matter. The result is, that in the majority of cases of fistula, opening outwardly, which present themselves, an opening can be detected immediately above the sphincter. The *fistula* is said to be *complete*. In some cases the opening can be detected with difficulty, and the coats of the bowel are, perhaps, denuded far above it. In other cases, by the most careful examination, no communication can be discovered to exist—the *fistula* is then of the *blind external kind*. Occasionally the matter, from the first, tends to the bowel; the external swelling is not great, or is, perhaps, not searched for as it ought to be. No assistance, perhaps, is applied for, relief is obtained, and the stools are observed to be mixed with blood, and, afterwards, with well-digested pus. The cavity of the abscess and the issue from it diminish, but the patient feels uncomfortable in the parts. The discharge becomes, perhaps, confined, and additional swelling arises, with painful sensations. By an examination,—which you will be led to institute from the history of the symptoms preceding the appearance of discharge with the stools, the feeling of fulness, throbbing, and pain in emptying the contents of the bowels,—a soft point will be perceived on the introduction of the finger, and a probe, properly and curiously curved, may be turned into the sinus, and its point felt by the finger passed by the side of the verge. The surgeon who has had experience in these matters, will, by a previous careful manipulation, have discovered the hardness surrounding the track, and will be prepared, not only to expect where the internal opening is to be discovered, but also on what side of the anus the point of the probe is to present. A *blind internal fistula* is thus known to exist. Fistula of all these kinds may be the result of injury. Foreign bodies passing down the canal lodge here, and frequently perforate the bowel, and give rise to abscess and fistula. And, again, from without, sharp bodies may penetrate by the side of the viscus, or may penetrate its cavity. I had once to treat a very extensive and complete fistula, in the person of a young sailor, who had got too much whisky aboard, and sat down rather quickly upon the sharp spike of a scraper. I have met with instances of very awkward and dangerous wounds of those parts of the bladder, and other viscera of the pelvis. In some the foreign body had entered the anus without external wound; in others it had passed so far by the side of the bowel before entering it. Under very unfavourable circumstances nature will sometimes bring about a cure, and without much assistance or interference from art.

Now, in the treatment of all these forms of the affection, the principle is the same, and the operation requires to be but slightly modified to suit the circumstances of each case. The sphincter is to be divided with the *loose* wall of the cavity; its edges are permitted to retract, and come in contact with the opposite surface. The powerful action of the levator is then no longer called for in the evacuation of the intestines. Rest is thus, in a great measure, obtained. Besides this, the actions of the parts are roused by the manipulations and the incision; the surfaces granulate kindly, and nothing now interferes to prevent their ultimate cohesion and consolidation.

But many circumstances must be looked to before you proceed to any operation for the cure, or even to the examination, of the disease. It has been very aptly observed, that the surgeon, to deserve and command success in his calling, must have studied the "quando, ubi, quare," equally as the "quomodo." There are states of the system, and of the internal organs, in which it would be most absolute folly and madness to interfere in the slightest degree with the local complaint,—to do anything which might tend to arrest or diminish in the slightest degree, or for even a time, the discharge from the secreting surface. Again, as it has been shown, the formation of a fistula is not an invariable consequence of abscess. Mr. Pott has, in his admirable treatise on the subject of fistula, advised that the bowel should at once be divided at the time of opening the depôt of matter. This proceeding, he says, saves pain, and relieves the patient from the anxiety about an after operation. In very few cases would I have you follow this advice. The parts are in a highly irritable state in most cases, and the patient could scarcely bear the introduction of the finger into the bowel, which is essential to the safe direction of the knife. If the abscess be of a chronic kind, the cavity not extensive, the situation close to the verge, then may this plan be pursued; otherwise it is better to relieve the painful feelings by a free external opening. Give this chance of a cure. If the sinus remain, all the excitement will, after a time, disappear, examinations can be made, and incisions may follow, perhaps to a less extent, and equally effectual, with comparatively trifling pain.

I need not detain you by any account of the cruel and unnecessary operations of the ancients,—of the cauterizations with actual and potential fires, and the excisions, which such eminent surgeons as LE DRAN, DE LA FAYE, and even CHESELDEN, did not hesitate to resort to, and which Mr. POTT did so much to discountenance,—of the ligatures of horse-hair and wire, employed occasionally from the time of HIPPOCRATES to that of DESAULT, and of the tenting and stuffing of the wounds with all sorts of combustibles, red, yellow, and green ointments. Much of this bad practice arose out of a false pathology, from a dread of the "callosity," as it was called, surrounding the cavity of the abscess or fistula. You will find in KIRKLAND'S "Medical Surgery" a sufficient account of the operations for this disease from the earliest times, and you have here put before you, I believe, every piece of old apparatus that has been used for that purpose. The syringotome, the probe scissars, the sliding and concealed bistouries, the wooden gorgets, the probe-razor, the bistouri royal, Cruikshank's sliding knife, and all other sorts of complicated tools, besides the apparatus for passing the ligatures. A probe and Pott's bistoury, made a little longer than usual, and formed like the one you have seen me use on many occasions, with the point so fashioned that it can be made to bear upon and divide any part which is interposed betwixt it and the finger,—are alone required, whatever may be the kind or extent of the sinus. You do, besides, need for the *internal* fistula, a sharp-pointed instrument, a lancet, or a scalpel, or a bistoury, to make it complete.

In the following case, now in the hospital, you saw how very simple and short a matter the operation for fistula is when properly gone about:—

J. B., ætat. 20, admitted into the North London Hospital, February 2, 1835. He states that his bowels have been moved with difficulty for the last two years; about two months ago a painful swelling made its appearance on the right side of the anus. Fomentations and poultices were applied, but without effect; an abscess formed, and opened spontaneously, about twelve days from the first appearance of the swelling.

Since then the opening has continued to discharge considerable quantities of a thin purulent matter; the pain is not severe when he is in the horizontal position, but it is extremely troublesome when he is erect, and during evacuation of the bowels; his general health is much impaired, and his appearance is unhealthy; the bowels are at present open from castor oil given last night, but they are generally slow, requiring the frequent use of aperients; the pulse and skin are natural; the opening of the fistula is small, and there is but little surrounding induration. The probe can be passed up alongside the rectum for about an inch and a half, but there is no internal aperture.

The operation was performed at the hour of visit in the usual manner. Lint dipped in tepid water was interposed betwixt the edges of the wound, throughout its extent, and retained by a compress and a T bandage. A draught containing gtts. xxx *Sol. M. Morph.* was given immediately afterwards, and repeated in the evening.

3rd. No complaint of pain; bowels not moved; pulse 60; skin natural. Cont. haust.

After experiencing some difficulty of breathing, the patient some days ago expectorated a considerable quantity of blood, and, on minute inquiry, it has been discovered that he, on a previous occasion, had a similar attack. On his admission he made no complaint of his chest, and had no cough or pectoral affection, to all appearance. He has lost some blood from the arm, and had the acetate of lead exhibited for a few days, since when he has been improving. We shall adopt no means in this case to arrest the discharge, and it may come to be a question how far an issue ought to be kept up from some convenient spot, to compensate for the discharge when it begins to diminish.

I have, in some of my former observations on the diseases of the rectum, turned your attention to the previous treatment,—to the necessity that exists for having the intestinal canal thoroughly emptied before any operation is attempted. If the incisions be not made more extensively than I have recommended, — merely through that part of the bowel which is embraced by the sphincter,—little or no blood will be lost. The dressing—lint soaked in tepid water (the most *simple* of all dressing, and very generally applicable) —must be carefully placed between the edges of the incision; this is done with a probe, or a director, or with the bistoury. You assure yourself, by the introduction of the finger into the bowel, that the dressing is properly interposed; your object must be to retain this until the cut edges begin to secrete purulent matter. With this view, and with the view also of saving pain, means must be taken to prevent the bowels from acting for some days: a strict diet, quiet, and small occasional doses of opium, or its salts, generally avail. If this be attended to, little further treatment will be called for. The parts must be kept

clean, so as to guard against excoriation. From time to time an examination is to be made, to ascertain that no adhesion has formed; this is not much to be dreaded until the surface has become florid, and the discharge has diminished: then the granulations will sometimes cohere rapidly and firmly. The passing of the finger into the bowel and wound, now and then will put all right; thus, much pain and annoyance is got rid of, and a more rapid cure will ensue than under the old and absurd system of stuffing, with tents and pledgets smeared with different supposed mundifying, incarning, and cicatrizing remedies. If any dressing is to be used, it ought to be superficial and *simple*, of the nature already spoken of, and with the addition, after a time, of the zinc lotion, with some aromatic tincture.

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ON THE

## NATURE AND SEAT OF TUBERCLE.

*By* T. G. Hake, M.D., *Senior Physician to the Brighton Dispensary.*

Guided by recent dissections, I have been led to doubt the propriety of classing the morbid development named "tubercle" with the heterogeneous productions of the body, and to consider it as a disease of the lymphatic glands; but in suggesting this view of the subject there is no desire, even on my own part, to adopt the theory, unless it should be confirmed by general observation.

Could we discover the immediate seat of tubercle, and speak with certainty of the tissue of which it is formed, our diagnosis in the first stage of phthisis might be accompanied by a better hope; for where the tissue in which a disease resides is known, the treatment must be more efficacious, since the remedy is direct.

Two cases will be sufficient to illustrate the views which are to be discussed in the present paper.

### CASE I.

A poor Irish woman was in the habit of bringing her child, a boy of about two years of age, to our dispensary. She described him as having been of a good constitution, healthy, and strong, until six months ago, at which time he was weaned. The first symptoms of disease which then appeared were convulsive movements of the hands and eyes, during which the former became closed and the latter uplifted; the child being in the meanwhile insensible. The fit having lasted in this manner for fifteen minutes, would disappear, without leaving any trace of indisposition. The parents of the child were not well matched, since the mother was tall, of a clear scrofulous complexion, and in character energetic, while the father was short, dark, and of a timid disposition. Beyond this pair no information relating to hereditary predisposition could be procured. Of their children, six had died under the age of thirteen months, and five of these were girls; and, as nearly as could be ascertained, one type of feature, as well as of disease, pervaded this unhappy family.

The convulsions returned after a few days, and were frequently repeated. By this time there was difficulty of breathing, with vomiting of mucus, and the frequent evacuation of green and light-coloured stools, of an offensive odour, and a gelatinous consistence.

The colour of the tongue was white; there was an increase of appetite; the abdomen was hard. By the aid of medicine the stools were restored to their natural aspect.

The arterial circulation was languid.

The respiration was at one time quick, at another almost imperceptible, and sometimes almost suffocating; the cough was at first frequent, afterwards rare, but finally abolished.

Until the night before death the cutaneous exhalation ceased, at which period it was re-established for the space of one hour.

The secretion of tears was increased to a great extent; that of mucus in the œsophagus diminished, causing thirst; and the urine was of a light colour.

The absorption of the solids was accelerated without a proportionate nutrition, giving rise to general atrophy.

The intelligence was lost, together with the senses of vision and hearing, two days prior to dissolution. There was moaning during slumber in the early stage; latterly there was but little sleep, and during the last ten days the infant had no repose.

The convulsions became general, pervading almost the whole muscular system; there were cramps in the legs; the voice had ceased for several days.

*Autopsy.*—The morbid conditions corresponding to these symptoms were ascertained. There was effusion of serous fluid into the lateral ventricles, and degeneration of the medullary substance of the left posterior lobe of the cerebrum into a white pulpy fluid. The latter was contained within a cavity which communicated with the left lateral ventricle, so that without blending, the contents of either cavity

were in contact, giving rise to that appearance which chalk and water assumes when the former has subsided. There was ramollissement of the thalami nervorum opticorum, and of the corpora striata.

Beneath the arachnoid membrane of the medulla spinalis there was an effusion of serum, and that part of the spinal marrow which corresponded with the dorsal vertebræ was softened.

In the lungs numerous miliary tubercles were found. They were translucid, of a grayish colour, and, in consistence, demi-cartilaginous.

In the mesentery the glands were enlarged; of some, the substance was yellowish and opaque, of others, transparent, and containing concrete pus.

CASE II.

A youth named T——, of the age of sixteen, had been afflicted for eight years with porrigo favosa. His figure, complexion, and features, were such as we are in the habit of immediately deciding to be the visible symptoms of scrofula.

When I first saw him, it is now seven months since, he was in a dreadful state. The head, trunk, the members, every part was covered with large incrustations. The left arm, bent over the chest, was fixed in that position by the disease; there was a continual running from one of the sores on the right leg; the whole body was wasted, the emaciated features were fixed into an expression of deep suffering.

None of the family had been similarly affected, but the father, from the appearance of his nose, which was partly destroyed, had evidently been the victim of syphilis.

The digestive organs were deranged, as manifested by redness of the nostrils, loss of appetite, and alternate costiveness and diarrhœa.

The circulation, as indicated by the pulse, was slow and feeble.

The respiration was difficult, and accompanied by cough.

The cutaneous exhalation was abolished; the secretions were natural, save that of urine, which varied with the derangements of the digestive organs.

Nutrition was but scantily performed. There was general atrophy; the skin was of a yellow hue.*

Frequently there was acute pain in the right side. The sensibility of the surface was greatly increased; the intelligence of the mind was undisturbed, and the senses performed their functions faithfully. Sleep could only be procured by large quantities of opium, which were taken daily; indeed that substance ultimately lost all effect. There was frequent shivering. The voice was feeble and shrill, but his moans resembled the howling of a dog.

*Autopsy.*—On opening the chest, water was discovered within the left pleuritic cavity, and the lungs of the same side were found to be congested. The pleura covering the ribs, diaphragm, and a portion of the left inferior lobe of the lungs, appeared studded with tubercles; but on carefully removing the serous membrane, these bodies were proved to be beneath and not within its substance. The tubercles were yellowish, opaque, and consistent.

In the mesentery there were five glands of the size of small walnuts. Half of their bulk consisted of concrete pus, which was softening at its centre, and the remainder were of a grayish, translucid, tough substance, which surrounded the former, but not uniformly.

The coats of the stomach and intestines were of a pallid hue. The blood contained within the right ventricle consisted of a dark coagulum surrounded by serum.

*Remarks.*

I have selected from many others the above cases, because they in themselves are sufficient to establish a comparison as regards the structure of tubercle, both in the first and second stages of the disease. Let us first observe the similarity of structure between the miliary tubercles of the first, and the mesenteric of the second case. It is true there was a difference in size, and that parts of the latter had gone on to suppuration, but the organic portions, like the miliary tubercles, were of a grayish colour, semi-cartilaginous consistence, and in appearance transparent.

Again, on comparing the mesenteric tubercles of the first with those discovered beneath the pleura in the second case, we see a resemblance between them while in their second stage; each being opaque and of a yellowish colour.

The mesenteric tubercles of the first case had all the characters which the pulmonary tubercle assumes in its second stage, and these we know to be the mesenteric glands themselves; not an accidental production within those organs, but a morbid development of the organs themselves. The tubercles found in the second case beneath the pleura, were in a situation wherein lymphatic glands abound, viz., in the cellular tissue beneath a serous membrane; moreover, to identify these tubercles with the glands themselves, we

* The attention of scientific men has been but little directed to this phenomenon, the utility of which in dyspeptic affections I shall shortly endeavour to explain.—T. C. H.

must consider that their structure is similar to that of the tubercles, which we know are only enlarged absorbent glands.

Having once decided that a disease is in any particular tissue, we must admit that wherever that disease is found it exists in the same tissue; since different causes cannot produce the same effect. On this principle, then, we may argue that all tubercle consists of a morbid development in the lymphatic glandular system, whether pertaining to the lungs or any other organ of the body.

Brighton, Feb. 19th, 1835.

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## LITHOTOMY.

### THE OPERATION AND AFTER TREATMENT.

*To the Editor of* THE LANCET.

SIR,—The insertion of the following case and remarks in your journal will oblige, Sir, your obedient servant,

EDGAR ASH SPILSBURY, M.R.C.S.

Walsall, Feb. 10, 1835.

Davis, a child, æt. three years and a month, had been labouring under severe symptoms of stone in the bladder for twelve months; and his sufferings were so constant as to render all who were around him impatient of the agony which he endured, and the continual compulsion to cross his legs, with spasmodic violence, when the bladder contracted on the stone.

The operation (assisted by Mr. Dehane, surgeon of Wolverhampton, and my son, Mr. G. Spilsbury) consisted of the usual divisions. A point was selected, quite under the arch of the pubis, Key's straight staff having been previously introduced. As soon as the external opening was well upon the staff, the incision into the neck of the bladder was effected with great lightness by the gorget. This opening, intentionally, was a small one. I then introduced my forefinger upon the gorget, and finding the opening sufficiently large for its easy passage, I withdrew the instrument which had thus served as a director to the finger. Unknown to me the child had emptied the bladder a little while before the commencement of the operation. The stone lay upwards; my finger reached it, but it did not descend. A small curved forceps, though two or three times well fixed, also failed to extract it. About fifteen or twenty minutes elapsed before I was able to detach it from its adhesions, but when loosened it passed without difficulty through the opening and the external wound.

On looking attentively at the stone (an almond-shaped one of phosphate of lime, weighing a quarter of an ounce), it was very obvious that its adhesion was already in a small degree sacculated. Both ends had been adherent.

The day afterwards the urine flowed through the natural passage, so that the sphincter of the bladder could only have been partially divided. On the 4th day no water could be observed at the wound; and on the 9th the wound itself had completely healed. The boy's bladder is very retentive; but I have made similarly small incisions in other cases in children, and in both the restoration of the natural outlet was nearly as speedy as in this, as was also the complete cure. Yet neither of them has been fortunate enough to escape a dribbling of urine, and one of them hardly ever has the bladder retentive, except while in bed.

A surgeon of some experience, on reading my late remarks in THE LANCET, on the operation of lithotomy, suggested that sloughing of the bladder might be the cause of this evil, but that accident has never happened in my operations. The quickness of recovery I impute to the lowness of the opening made into the urethra, and to the great care taken not to make a larger incision than is absolutely necessary. Indeed I would infinitely prefer (be it a large or a small stone) extending a small opening at its necessary dimensions than cutting one at the outset as large as the gorget is capable of making it.

No one, in my opinion, should undertake lithotomy, who is unable to perform it with a scalpel; but having said thus much, I cannot dismiss the subject of the gorget without some further remarks. The objection to the gorget is "its abuse." That instrument was never intended for display,—to be used, in fact, with a plunge. Like the knife, it should be used lightly and delicately, slipped rather than pushed along the groove of the staff. There is something in the feel of the gorget when used as a cutting instrument,—when the judgment leads and the gorget follows, lightly poised between the finger and thumb,—which renders it superior to every other instrument for making the incision of the size which the mind has previously determined on. But if the gorget be plunged up to the hilt, and the *judgment* follows the *plunge*, accidents must ensue, however dexterous the hand that wields it. There ought not, however, to be any argument against the gorget. It should be a rule well kept in mind, that the gorget is a *cutting* and not a *plunging* instrument. To use it properly is to know

how to use the scalpel. The hand is throughout to be under the ready guidance of the mind,—not the mind to be permitted to follow the hand.

The after treatment of persons who have been submitted to serious operations, is a subject worthy our deepest consideration. The distinction so important between "irritative" and "inflammatory" symptoms, is a point of discrimination only to be acquired after a long study of disease. There is no better school for its attainment than the last stages of organic diseases. In such we are quite sure that the patient, who is wearing out by exhaustion, cannot be the victim of inflammatory symptoms. In him it must be the highest state of irritative action.

In illustration of these observations, I will select two cases of operation for stone. Upon one, a boy, I operated at mid-day. He had been eleven years a sufferer. Of course the organs of respiration and circulation were suffering under the long continuance of their irritative cause. About five o'clock the same day I found him flushed, with mucous breathing, and intense pain in the chest; a quick pulse and hot skin. I gave him a glass of hot brandy and water, which acted like a charm. His pulse fell, he slept comfortably; and his recovery was never afterwards interrupted.

I operated for a friend upon another boy, five years old, and removed a large stone. I begged that my friend should be sent for in the evening, on the plea that the child was dying, advising him to avoid leeches and bleeding, notwithstanding the rapidity of the pulse, and, instead, to give the child some hot wine and water. He came and found the child at its last gasp. There was mucous breathing, rattling of the throat, and restless pain at the hollow of the abdomen. Remembering my anxiety, though not quite convinced, he gave the wine and water. The boy fell into a deep sleep and awoke refreshed, and from that time his cure was rapid. Were it necessary, I might multiply similar instances, after operation for hernia, severe child-birth, &c.

The effect of exhaustion from severe injury should never be lost sight of. In fact, a moderate degree of pain in the neighbourhood of that injury is a symptom consequent on the first attempts of nature to repair, and will be relieved by stimulants and opiates. I may add that Mr. A. Jukes, surgeon to the *Birmingham Hospital*, has acted on the same principle, and feels no hesitation to give a dose of opium after an operation for hernia. The very nature of this operation would make one careful of administering irritative purgatives. It is by rest and soothing treatment that we must attempt to allay the first symptoms, waiting patiently the operation of nature's own laws. It is to Marshall Hall that we and the profession at large are indebted for having first cleared away the maze which involved this subject.

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## DRS. DAVIDSON AND HUTCHINSON.

*To the Editor of* THE LANCET.

SIR,—According to promise I now beg to send you an accurate copy of Dr. Hutchinson's notes of the case of Thomas Moss, "taken during the six months the poor man was under his management," the Doctor having in his letter published in THE LANCET of Jan. 17th, granted me his "full 'sanction' to make what use I please of his notes" of the case taken during this period.

"Oct. 22, 1832. Thos. Moss, ætat. 22, labourer, Hucknal, recommended by Col. Wildman. Has great debility subsequent to continued fever; complains of pains in the head and left side; has cough and expectorates profusely; no night sweats. Applic. lat. sinist. olei crotonis tig. gutt. iv.

R. *Tinct. Digit.* gutt. lx; *Tinct. Ferri Mur.* ʒiij; *Tinct. Camph. Co.* ʒij; *Aquæ* ʒvj. Misce. Capt. coch. iij ter die.—R. *Extr. Hyos., Extr. Pap. Alb., Pil. Hydrarg.*, a. a. ℈j. Misce. div. in pil. xij. Capt. ij o. n. h. s.

23rd. *Ol. Ricini* ʒvj stat. sumend.

25th. Lower lobe of left lung hepatized. Cont. med. Capt. *Hydr. Subm.* gr. vj; *Opii* gr. ¾; *Antim. Tart.* gr. ½ h. s.

R. *Pulv. Jal. Co.* ʒij mane sumend.

27th. Lies better on left side; cough improving. Repet. pil. *Cal. cum Opio* h. s. sum. et *Pulv. Jal. Co.* mane sum. Cont. med. App. *Ol. Crot.* gutt. iij sterno.

30th. *Hydr. Sub.* gr. v. *Pulv. Jal. Co.* ʒij.

Nov. 1st. Headach, with confined bowels and loaded tongue.

R. *Inf. Rosæ* ℥vj; *Mag. Sulph.* ℥j; *Tinct. Digit.* gutt. l; *Tinct. Camph. Co.* ʒss. Misce. sumt. coch. iij quar. in die. Omr. mist.

8th. Tonsils inflamed; fever with confined bowels. *Full diet.* Utat. garg. Rosæ acid. Capt. stat. *Hydr. Subm.* gr. viij; *Opii* gr. ¾; *Antim. Tart.* gr. ¾, et repet. h. s. R. *Pulv. Jal. Co.* ʒij, prima mane sumendus.

13th. Cont. med. App. aurib. emp. lyttæ.

15th. Complains of headach and weakness; tongue white and furred.

R. *Dec. Aloes Co., Inf. Gent. Co.*, a. a. ʒiij. *Spir. Ammon. Arom.* ʒiij. Misce. sumt. coch. iij bis die.—R. *Pil. Hydr., Ext. Coloc. Co., Extr. Pap. Alb.*, a. a. ℈j. Misce et div. in pil. no. xij quar. capt. ij o. n.

17th. Improving; cont. med.

26th. Pains in the side occasionally. App. emp. thuris co.

28th. Headach; thirst; bowels confined. Cont. med.

Dec. 5th. Pains in the back; the symptoms improving. App. reg. lumb. Emp. thuris mag.

16th. Cont. pil. u. a. Repet. mist. sed adde *Spir. Æther. Nitr.* ʒiij.

26th. Improving. Cont. med.

Jan. 3, 1833. Has headach and pain in the bowels. Capt. st. *Ol. Ric.* ʒj.

8th. Papular eruption; stomach disordered; bowels confined. Baln. calid. tem. 98° bis septim. Capt. tertia quaque mane *Pulv. Jal. Co.* ℈ij. Capt. *Liq. Potassæ* ʒj ter die.

16th. Bowels confined; eruption. Prurigo mitis? Improving. Habt. enema purgans o. m. Cont. gutt. et med.

21st. Eruption worse. V. S. ad ʒij. Cont. gutt. Cont. baln. calid.

24th. Cap. (illegible) ʒj ter die.

27th. Eruption improved. Cont. med.

Feb. 5th. Has passed some teniæ. Cap. *Spir. Tereb.* ʒvj stat. et rept. 6tis horis si opus sit.

9th. Passes three pots full of urine during the night having a white deposit; headach; constipation. Full diet. Om. pil.

R. *Mag. Sulph.* ʒiss; *Aq. Menth. Pip.* ʒvj; *Acid. Sulph. Dil.* ʒij. Misce. sumt. coch. iij ter die.

14th. Urine saccharine, limpid; three pots full passed during the night. Cont. med.

18th. (Illegible.) Capt. stat. *Hydr. Subm.* gr. x; *Pulv. Jal. Co.* ℈ij. Cont. alia.

21st. Urine not diminished in quantity. Capt. *Pulv. Jal. Co.* ℈ij tertia quaque mane. Capt. *Ferri Carb.* ℈ij ter die. Om. alia.

25th. Improving. Cont.

March 3. Improving. Cont.—5th. Discharged; made out-patient.—28th. Cont. remedia.—April 18th. Cont. remedia. Emp. thuris lat.—Aug. 29th. Discharged for non-attendance."

The following additional facts, connected with this case (the correctness of which is established by unquestionable evidence), appear to have escaped the penetration of my learned colleague, or were considered by him *too trivial* to require their being recorded.

Thomas Moss exhibited the unequivocal signs of diabetes mellitus—viz. bulimia, polydipsia, loss of flesh and strength, and *profuse discharge of strongly saccharine urine*, in the *summer* of 1832, and at the time of his admission as an in-patient of the hospital under Dr. Hutchinson in the *Autumn* of 1832 (Oct. 22), *the quantity of urine evacuated was so great that it was found necessary by the nurse of the ward to provide him with two urinals, each of larger size than those ordinarily used by the patients, and his appetite was so voracious that he robbed the other patients of their food*, for which he was on one occasion, during the time he was under the care of Dr. Hutchinson, brought before the committee and reprimanded.

In reviewing Dr. Hutchinson's treatment of this case, we are compelled to believe these strongly pathognomonic features of the malady under which the patient laboured (which the simple inquiry respecting the ingesta and egesta that is usually made in every instance of disease would inevitably have brought to light), were entirely overlooked, or that the learned Doctor is a disciple of the homœopathic school, since diuretics and hydragogue cathartics run through the whole of his therapeutic course.

And now, Sir, in conclusion, I put it to yourself and to the entire medical profession, whether it is becoming, whether it is to be endured, that an individual capable of exhibiting such diagnosis, such practice as is manifest in the foregoing case ("ex uno disce omnes"), should presume to impugn, as he is notoriously in the habit of doing, the abilities of those who exercise their profession around him; many, nay, *most* of whom, are, as regards abilities, attainments, experience (to say nothing of certain non-professional but very important qualifications), so incomparably his superiors. I have the honour to be, Sir, your most obedient humble servant,

JOHN MITCHELL DAVIDSON, M.D.,
Senior Physician to the Nottingham General Hospital.

Nottingham, Feb. 17, 1835.

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ARSENIC.—Dr. Strohmayer, in his *Medicinische Praktische*, relates, in exemplification of the extent to which the system may become accustomed to the operation of arsenic, that a peasant who resided near a convent in the Tyrol, for a long time took ten grains of arsenic daily with his food. The inmates of the convent fully testify the truth of this statement.

THE EFFLUVIUM FROM

## DEAD ANIMAL MATTER.

THE indictment mentioned in THE LANCET of last week as having been preferred in the name of the KING against Mr. BRAY, a comb-maker and bone-merchant of Norwich, for a nuisance alleged to arise from the burning of bones on the premises of the defendant, was tried before the Mayor and Magistrates of that city on Friday fortnight (or three weeks?), occupying the attention of the court for nine hours, and exciting great interest in the neighbourhood. We now again refer to the trial for the purpose of contrasting the opinions which were given on that occasion by the medical witnesses. Such remarkable diversities of belief,—only a sample, very probably, of the contrariety of opinion which might be elicited in any other large town of the kingdom,—demand the consideration of those whose business it is to decide upon questions which involve the preservation of health. An exposition of the evidence is calculated to awaken useful reflections on the imperfections of that sanatory creed which permits the existence of such an unsettled state of belief amongst us.

In order to prove that the prosecutors had a case to present to the jury, and to show generally how it was met by the evidence of persons similarly situated as to *residence*, we shall first briefly record a summary of the statements of the non-medical witnesses in support of, and against, the allegation, that Mr. Bray's trade was both hurtful to the health and unpleasant to the nose:—

### *For the Prosecution.*

*Mr. Harmer*, who had lived in an adjoining house, deposed that he used to keep the doors closed to shut out the "horrid stench," and that his wife was ill during nearly the whole of the two years of her residence there. (Other causes, however, not ascertained, might have produced this latter effect.)

*Joseph James* could not bear to visit Mr. Harmer's house because the smell from the burning bones was "so bad."

*Mr. H. Youngman* deposed that "the smell from the putrid bones was extremely disagreeable, and the stench from the boiling and running liquid worse than all."

*Richard Smith* was made to vomit several times last summer by the stench.

*Robert Scottow* "often perceived a horrid smell from the bones and boiling. His wife was ill last summer, and was attended by Mr. Gowing."

*William Tann* and his family removed from the neighbourhood on account of the "nauseous sickness which they experienced from the bone-yard."

*Mr Youngman*, the prosecutor, deposed "that a horrid smell came into his house from the yard."

*Michael Murrell*, a watchman, had often been obliged to leave his station on White Friars bridge on account of the smell. The bones in the yard were very bad, the boiling was worse, and the letting off the liquor worst of all.

*Joseph Curtis* and *Dennis Ransome*, workmen in an adjoining building, were affected by the smells; the former could not, one morning, eat his breakfast in consequence of sickness produced from the stench.

### *For the Defence.*

*James Edwards*, who lived next door to Scottow, said that "he liked the smell very well, and that it did not incommode him. It was something like pea-soup in summer."

*Mr. Tadman*, a near resident, was "never annoyed by the smell;" but this gentleman (a neighbouring gas-maker) deposed that he liked the smell of gas-works *very well*.

*Stephen Maltster* used to smell something "disagreeable," but it was no annoyance to him, and he could not distinguish the odour of the bones from that of gas.

*Robert Powley*, landlord of Tann's house, which is only divided by a passage from Bray's, said the trade had never been an annoyance to him. Tann, however, had complained of it.

*T.* and *J. Smith*, and *B. Sanders*, lived fifty yards off, and were not annoyed by the smell.

*Gregory Emerson*, one of Mr. Bray's workmen, said the smell was no nuisance to him; the boiling was not a pleasant smell, but he did not mind it. Mr. Bray employed sixteen persons. The hoofs were cut and boiled, and then made into combs.

*George Christian* took in the bones, but he never bought them with the flesh on. They had no bad smell, even in summer.

[The foregoing facts at any rate tend to establish the existence of certain idiosyncrasies with regard to the effluvium arising from the decomposition of animal matter. Do they extend to strong and healthy persons, or to the delicate and invalids only? We now extract the medical evidence just as we find it, excepting that we place these opinions also in juxtaposition.]

*For the Prosecution.*

*Mr. Hull*, surgeon, deposed that he attended Mr. Youngman and his family, and he also attended Mrs. Harmer in the house spoken of. He considered the smell arising from putrid flesh and bones, and from the boiling of them, to be *very unwholesome*. It was likely to produce an affection in the bowels. When he inspected the neighbourhood at the time of the cholera, he was not aware of the existence of this establishment—if he had been, he should have pointed it out to the magistrates in the strongest terms of reprobation. Mrs. Harmer was very feeble when he attended her, and they were fearful of her going into a consumption. She has been better since she left the house. Such smells *would be injurious to persons in her state*. In cross-examination, Mr. Hull gave his opinion that decomposed animal matter was more injurious than vegetable matter.

*Mr. Johnson*, surgeon, also gave it as his opinion that the smell from putrid bones was *very injurious*. Decomposed vegetable matter would produce specific diseases; decomposed animal matter rendered persons *more liable to attacks of contagious diseases*, and was *injurious* in consumptive cases, and to persons of consumptive tendency.

*Dr. Ash* considered the effluvium of putrid bones *decidedly injurious to the public health*. He believed it might *produce diseases*, and it *predisposed* the stomach to other diseases. He *never heard a doubt on the matter* from any one who had not a direct pecuniary interest in denying it.

*Mr. Goving*, surgeon, believed that such smells were *injurious to health*, but he had no case of cholera in the neighbourhood besides that of Mrs. Scottow. He believed that such smells *predisposed* to disease by destroying the digestive functions.

*For the Defence.*

*Mr. Nicholls*, surgeon, deposed that Mr. Bray's trade, in his judgment, was *not at all prejudicial to health*. The effluvium from the decomposition of animal matter, when first experienced, would produce disorder of the digestive organs, but *the continual exposure to it was rather conducive to health than otherwise*. Greater injuries were likely to arise from the decomposition of vegetable than of animal matter, because the animal matter emits a greater quantity of ammonia, which is *rather beneficial to health than otherwise*. He was not prepared to specify the gases in vegetable substances.—(*Cross-examined*.) The disorder in the digestive organs from animal matter was at first prejudicial to health, but *afterwards* conducive to *longevity*; the ill effects might be removed in twenty-four hours. The disorder was not likely to be fatal. His opinion was *in accordance with the best works on the subject*, and the opinion of *the best medical practitioners*. At the time of the cholera, witness was directed to see that putrid matter, both animal and vegetable, was removed, but apprehends that this was done, not so much because it was prejudicial to health, as that the opportunity might be taken of removing these annoyances. Still there were different opinions on the subject. Putrid matter was an annoyance unquestionably. (Mr. Palmer, the counsel for the defence, said that the question was, whether it was injurious to public health.) Makers of glue, cat-gut, and buckram, butchers, tanners, and all those who work where there is *animal effluvium*, are *healthy*, and remarkably free from cutaneous diseases.

*Mr. Stark*, chemist, said that his opinion, gathered from extensive reading, was that all persons breathing *the effluvium from animal decomposition* were *exempt from epidemical diseases*; they were not so liable to infectious or contagious diseases as others; and another very curious fact was, that during the rage of the cholera, not only here but in London, and he believed everywhere else, not a single butcher, or other person constantly in animal effluvia, was attacked. Of 320 persons sent to the Leeds Fever Hospital in 1821, not a single person belonged to any of these trades. He should therefore consider them rather beneficial than otherwise.

The cross-examination of *Mr. Stark* affords the following additional paragraph:—"*Mr. Evans.* Do you consider that the smell arising from a heap of animal matter, acted upon by the rain and sun, is beneficial to health? *Mr. Stark.* My opinion is, that all persons engaged in the trades I have mentioned are generally in good health.—*Mr. Evans.* Is it generally beneficial to the passers-by? *Mr. Stark.* I think it is decidedly beneficial to them, and I should like to give you some very

high authorities for that opinion. My opinion is confirmed that it is at least not injurious to passers-by, and is beneficial to those employed in it. Mr. Bray called on me to go down and witness his boiling the bones, and look over his yard, in October. I saw no mass of putrid animal matter. It was such as ammonia arises from: there was very little flesh, and there was a great deal of ammonia arising from the copper as they were boiling. This is not injurious, but quite the contrary. Putrid matter and what I saw are widely different. Putrid animal matter gives out no ammonia. If I am asked as to putrid animal matter only, my answer would be different.—*Mr. Evans.* My question is this, whether bones with some kind of flesh upon them, putrified, are not injurious? *Mr. Stark.* Not unless there is a great mass of flesh and a small portion of bone. There was not two per cent of flesh."

The report of the speeches of the counsel does not show that they contained any references to medical opinions, and the jury, after some deliberation, returned a verdict of "not guilty of a public nuisance." However, upon the attorney for the defendant saying that "notwithstanding the verdict, Mr. Bray would do everything in his power to remove any reasonable cause of complaint, by making the business as little offensive as possible," one of the jurymen said "he was *glad to hear that*, for they intended to express *a wish that he should.*"

The manner in which the questions involved in this trial should be argued, the points which are most worthy of being prominently advanced, and the accumulation and bearing of facts already on record on the subject of the atmospheric emanations from decaying and decomposed animal matter, we leave to the consideration of those who may be equally glad with ourselves to have the subject thoroughly sifted. Our space does not at present permit us to do more than afford an appropriate occasion for its discussion.

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Defiance to Disease.—My time has been almost divided between my saddle and my bed. I never knew what it was to be fatigued when I lived temperately and went early to rest. Such a life bade defiance to disease. A celebrated physician of the last century used to prescribe it to his patients. "Live," said he, "in a saddle." That riding is the most wholesome of all exercises I have little doubt. Despite all the vile stuff that finds its road down his throat, who ever heard of a bilious post-boy?—*Nimrod's "Hunting Tour."*

# THE LANCET.

*London, Saturday, Feb. 28, 1835.*

It affords us pleasure to be enabled to state that the Licentiates of the College of Physicians are acting with becoming spirit, and are maintaining the dignity of their body, and the respectability of the profession, by refusing to accede to any of the tricky proposals which are *now* made by their intriguing persecutors the Fellows. Had the Licentiates acted differently, they would have betrayed the trust which has been reposed in them, and yielded up the general rights of all graduates in medicine, with a view to serve their own selfish purposes.

It is thus that the cause of rational reform advances. Often has the insinuation been thrown out that if the Licentiates could but obtain the title of "Fellow," the institution in Pall Mall East would no longer be the object of their hostility. This calumny has now met with its proper exposure.

Still more frequently has it been alleged that the charges made against the College in The Lancet, have been urged in the absence of any facts by which they could be maintained. The present conduct of the Fellows is a sufficient refutation of *that* calumny, and now we would ask those gentlemen if they really are guilty of the folly of believing that the Licentiates of the College of Physicians, or that the members of the general body of the profession, will be satisfied with any changes which the heads of the Colleges, the self-elected rulers of those institutions, have either the power or the disposition to make? Nothing, as we have often stated, short of a comprehensive change in medical law, can, or ought to, satisfy the profession, or can be productive of those ad-

vantages to the community which it is in the power of the science and practice of medicine to afford. Had the Licentiates of the College of Physicians,—had many of the influential members of the Colleges of Surgeons in London and Dublin, consented, for a time, to yield to the solicitations of the tricksters, and to withhold a further display of their opposition, still, even that extent of folly and knavery would not have checked the tide of improvement which has been directed against the musty halls of the medical colleges.

The question of medical reform is now placed under the consideration of those individuals in authority who can, by possibility, have no object other than that of adopting such measures as will secure to the profession the whole of their just rights, and, at the same time, will provide for the public the means of cultivating the science of medicine with effect and advantage. ONE COMPREHENSIVE LAW, great as are these objects, would be amply sufficient for their attainment, or the law itself might be *tripartite*, although the principle which should pervade and govern the details of those divisions of the statute, would be one and undivided. The operation of such a law would soon be felt in every institution in England where medical practice occupies any share in the system of management. Can it be denied that, at present, the highest offices in medical practice are frequently, nay, almost constantly, given to individuals who are the least qualified in point of mental attainments? But all danger from favouritism will cease when no man is permitted to undertake the duties of a medical practitioner until his qualification has been proved before a competent authority, discharging its duties with sufficient publicity to guarantee a perfect integrity of conduct. Contrary to law, and to every principle of justice, the close hospitals of London have been made to constitute parts of the system which has been sanctioned in our medical colleges. In a word, the medical officers of the hospitals have supported the colleges, and the colleges have supported the medical staff of the hospitals.

These nicely dove-tailed contrivances will cease to exist when the members of the profession assume their just constitutional powers under a new well-devised law. What, we ask,—and a public answer to this question would afford as much satisfaction,—have our colleges and hospitals accomplished for medical science compared with what they *might* have effected had those institutions been placed under a proper system of government? As for the *Colleges*, they have done nothing but offer insults to the professional body, and with regard to the hospitals, only a few men have, up to this hour, been connected with them, whose names are destined to live in the annals of English surgery. This, too, must be remembered, that some of our hospitals, — such as *Guy's* and *St. Bartholomew's*, have obtained their reputation not on account of the effectiveness of their medical arrangements, but because men have, as it were by accident, found their way into them, whose minds and energies were sufficiently capacious and vigorous to enable them to overcome the difficulties by which they were at every point beset. The medical reputation of *St. Bartholomew's Hospital* was founded on the individual exertions of SHARPE, POTT, and ABERNETHY; that of *Guy's Hospital* by the exertions of Sir ASTLEY COOPER. The imperfections under which the system labours are, in fact, sufficiently proved by the absence of celebrity in the character of nine-tenths of the metropolitan hospital medical officers. It is not only quite clear that men wholly destitute of acquirements now obtain the highest offices in medical practice, but that their want of

natural talent is frequently such that they are incapable of turning to any beneficial account the most striking and advantageous opportunities for prosecuting research and discovery. When submitted to the care,—it is really a mockery to thus apply the word,—of such officers, what, we would inquire, must be the consequence to the patients? As dead men tell no tales, the fatal results of criminal ignorance are buried in the tomb of oblivion. Under an amended system of medical government, medical officers would enjoy, in the first day of their election or appointment, a greater degree of reputation than now belongs to nineteen out of every twenty of our hospital physicians and surgeons on quitting their posts after thirty years of service. But the Fellows of the College of Physicians, and the Council of the College of Surgeons, necessarily glory in the existence of the state of things which enables them to maintain a presumed superiority over the rights and pretensions of the general body of the profession. Stripped of the privileges of exclusion, what are the Fellows and the Councillors? Why the merest pretenders, as regards superiority in the acquisitions of science, or the capabilities of practice.

Let every independent physician and surgeon, therefore, continue to regard the manœuvres of the heads of these institutions with the contempt which they deserve. At the same time, as the intriguers are actively busying themselves with the members of the Legislature, in order to prevent a further parliamentary interference in medical affairs, we once more call on the profession to be alike active, but with purer intentions, and for a far nobler object. As the colleges resisted, by every possible means, the appointment of a medical committee in the House of Commons, so will they endeavour, by calumny and misrepresentation, to obviate the results which may fairly be expected to arise on the presentation to the House of the Report of that Committee. We call, therefore, on all independent physicians and surgeons to be "up and stirring,"—to exercise their influence with their friends in the Legislature, and obtain for that report a deliberate and impartial consideration and decision.

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Mr. Plumbe, who is personally conversant with many of the circumstances to which Mr. Lloyd referred in his advertisement in *The Times* noticed by us last week, having sent us the letter which will be found at page 789 of this week's Lancet, we think it unnecessary to make Mr. Lloyd's statements the subject of any further commentary at present.

Dr. Roberts, of *Bridge-street, Blackfriars*, wishes us to state that he is not and never was officially connected with the medical departments of *Christ's* and *St. Bartholomew's Hospital*.

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A surgeon in general practice, a clergyman of the church of England, and the master of a workhouse, all of a village, the name of which we at present suppress, have, we are informed, been summoned to appear before the magistrates at a neighbouring town on Wednesday next, the 4th of March, on a charge of forcibly seizing an inmate of the village poorhouse, and cutting him for the stone against his urgent entreaties, and reiterated remonstrances and outcries. The assaulted party is a youth sixteen years of age. How far the statements in circulation in that neighbourhood, with regard to the transaction, will be borne out by the evidence adduced at the examination, remains to be seen; but the following outline of circumstances has been communicated to us from a quarter which induces us to make them public in the pages of The Lancet.

The youth is the son of a labourer, who being too poor to provide for his sick and helpless son, eighteen months ago placed him in the poorhouse. The lad has for many years been afflicted with calculus of the bladder, and in March last the operation of lithotomy was performed on him by the parish surgeon, but without success, the wound remaining unhealed to this day. The youth would allow no second attempt of the kind to be made, the first having been attended by excessive suffering.

Thus continuing the victim of the disease, the state of the patient became known to a surgeon of a neighbouring town, who is described to us as a gentleman of great respectability, and who offered to relieve the youth by an operation (we suppose lithotrity, the horror of the lad being exceedingly great at the cutting process) which should last but a few minutes, and occasion him but little pain. Consent was given, and Friday the 13th inst. was appointed for his removal from the poorhouse to the town, where he was previously to undergo a preparation for the operation.

To this arrangement, we are informed, no objection was made in any quarter, but its consummation was defeated by the following events. On the day before the intended departure, the poorhouse was visited by the parish-surgeon, and the Rev. Gentleman, when the master of the house joined the party, and after a preliminary consultation, the young man was sent for into the committee-room, with a message that the clergyman wanted to speak with him. The lad presumed that he was about to be sent on some errand, and cheerfully attended, when the door of the room was closed, and the unfortunate youth was carried to the table,—despite his cries to be "let alone," that he "would not be again cut," that he would "sooner die with the complaint,"—forcibly placed on it while in a highly excited state, and, without being bound or strapped, was held down by a sufficient number of assistants placed at his arms and legs, and at once cut for the stone, the livery servant of the surgeon fainting during the process. The instruments of extraction, however, proved inadequate to their purpose, and the reverend divine was dispatched to procure other tools in the village, where the search yielded a pair of ladies' curling-tongs, which were procured at the house of a female, and forthwith carried to the shop of a blacksmith, who altered them according to directions given by the clergyman, and cooled them by immersion in the forge water. Thus prepared, they were conveyed to the surgeon for the continuation of the search, when the appeals of the youth for release were again urged, and were replied to by threats of gagging with a handkerchief, and dashing of water from a pail, if he did not cease to cry. On a complaint that he was sick, he was desired to "spew,"—how sick, was evidenced by the fact, that on being directed to stand up in the position of urinating, in order that the position of the stone might be changed, as the curling-irons would not grasp it, he proved to be too weak to comply. His release was soon after granted, and he left the room in the deplorable state which is too common after attempts at the operation of lithotomy. His situation then became publicly known, and by skilful medical aid the powers of the system were restored, and he now lives to tell this tale.

The greatest excitement has been occasioned by these events in the district of the scene, where indignation has vented itself, amongst other modes, in exhibitions, in chalk, on the walls, and hootings in the streets, of some of the parties concerned in the transaction.

In recording the facts which have thus been communicated to us, we have refrained from adding a word which did not seem necessary in the recital, and from all comment on them, for whatever character even the most simple narration of them may appear to bear, another and a more correct colouring may be given to the transaction on its investigation in a court of justice, if its journey in that direction be not arrested by some arrangement which cannot at present form the subject of remark.

## APOTHECARIES ACT.

### CHEMISTS AND DRUGGISTS.

*To the Editor of* THE LANCET.

SIR,—I beg to make you acquainted with the following circumstances; and at the same time to ask, of what use is the Act of 1815 as a protection to the general practitioner? Being aware of the great extent to which chemists and druggists practise in the town in which I reside, and I suppose they practise to an equal extent in all others, I lately applied to the Apothecaries' Company to know what evidence was necessary to support a prosecution under that Act against offending parties; and received in reply a copy of the lithographed "circular," stating what was deemed essential. Not being perfectly satisfied with the word "attend," as employed in that document, I requested further information; when the following reply was forwarded to me; and coming, as it does, from the clerk of the Apothecaries' Company, you will probably not consider it as unimportant:—

I am, Mr. Editor,
Your obedient servant,
A COUNTRY PRACTITIONER.

"Apothecaries' Hall, Feb. 11, 1833.

"Sir,—In reply to the questions contained in your letter of the 4th instant, I apprehend it to be quite clear that if a chemist and druggist prescribes for a patient, and furnishes him with medicine, and charges for his advice as well as his medicines, or charges such a price for his medicines as, with reference to the ordinary charge of the chemist and druggist, must be taken to include a charge for advice as well as medicine; he is practising as an apothecary, and consequently liable to the penalties of the Act of Parliament, if not legally qualified to practise as an apothecary; whether the advice be given at the counter, or at the bedside of the patient, is immaterial.

"On the other hand, I am not aware that the chemist and druggist offends against any provision of the law in giving his advice gratuitously any more than any other private individual; and if a chemist and druggist *really and bond fide* makes his patient a present of his advice, and only receives a reasonable price for his medicines, I know of no law to prevent his so doing.

"I am, Sir, your obedient servant,
"ROBERT D. UPTON."

## CHRIST'S HOSPITAL.

### REMARKS ON THE ADVERTISEMENT OF MR. LLOYD.

*To the Editor of* THE LANCET.

SIR,—It is the practice of the press to refuse the insertion of articles wherein the personal interests of the writer are more prominently consulted than the good of the public, except as advertisements. Hence, I presume, arises the "advertisement" in the *Times* of the 17th instant; but even an advertisement may do harm to a great number of innocent persons, and when it is manifestly calculated to discourage investigation, and prevent the exposure of grievances of many hundreds of individuals, who are too young to take care of themselves, as well as to advertise the writer for *the writer's own advantage*, then I apprehend it may, with the consent of the press, be met by any charitably disposed person, and allowed a fair chance of having its objects defeated.

Mr. Lloyd, according to his statement in the advertisement alluded to, found on his appointment in 1828 as many as 450 cases of "bad heads" in the two establishments,—little short of one-half, as it appears, of the whole number of the boys then in the two establishments. Mr. Lloyd one month later, i. e., April 1, 1828 (it being his first official report forthcoming), states nothing of the number diseased, but expresses his conviction that he shall succeed in completely eradicating the affection. It is provable, that at Hertford there were only 46 *cases when Mr. Lloyd met with* 450 *at the two establishments*, consequently, *at least half the boys* in the *London establishment* must have *then been diseased!* The 49 cases at Hertford are speedily afterwards found to have increased to 85, and at the end of the month after that in which Mr. Lloyd was appointed, to 200 cases. In the *corresponding months of the following year*, 1829, there were *in February* 182, *in March* 251, *in April* 244 *cases!* Here, after one clear year, came the promised "eradication;" and now Mr. Lloyd asserts that the disease is kept up by the introduction of new boys afflicted with the complaint when first admitted, or by the re-introduction of diseased boys who are taken home by their friends to be cured! With respect to the first of these two points, I beg to inform you, that the whole of the boys at Hertford (about 400 in number) were examined by me in November last, in the presence of three governors and a medical gentleman; and that there were less than thirty of the whole number of boys who

did not state that they *came in sound*, and got the disease *very shortly after admission*. It is a curious fact, yet easily explained, that the majority of that thirty had only been recently admitted, and two of the rest were the sons of Mr. Steele, the steward, who had been in for years, but who had had frequent access to their father's table, and received the attentions of their mother, who always allowed their hair to escape the routine system of shearing, and gave them plenty of vegetables.

With respect to the second point, the re-admission of an infected boy, Mr. Lloyd well knows it was provided against by a resolution of the almoners, long since passed, to the effect that each boy should be subjected to Mr. Lloyd's own examination and judgment (and no appeal to be allowed) on every such attempt to return. Mr. Lloyd asserts that when the labours of the special Committee to inquire into these matters* commenced, there were only six cases of ring-worm in the school in London. I, on the contrary, declare that there were upwards of forty boys kept in one small ward by themselves, their scalps covered with poultices and ointments of stinking tar and sulphur, when certain members of that Committee first consulted and introduced me as their adviser, and that that number constituted a fair average of many preceding months. I believe that in a month after that the number WAS REDUCED TO FIVE, and I yield to Mr. Lloyd, or any one else who may choose to take it to themselves, the credit of that reduction, for I went no farther than the expression of a rather decided opinion as to the character of the disease and the nature of the treatment.

Mr. Lloyd next states that the reception of imperfectly-cured boys from Hertford is a powerful mean of introducing the disease to London. Yet he knows, again, not only that he has been made the judge *without appeal*, of the condition of those boys' heads, on their coming to the institution in town; but that by virtue of that prerogative he has often sent back boys in scores, whom Mr. Colbeck of Hertford certified as "cured."

Lastly, Mr. Lloyd contends that the disease is partly introduced by the allowance of "leave days," those days on which the boys are permitted to go out at an early hour in the morning, and are enjoined to return early in the evening, from which inference of Mr. Lloyd it is plain that the boys must be rubbing heads to heads with ring-worm all day, instead of discussing *cakes*!

* A Committee to inquire into the efficiency of the medical establishment.

Mr. Lloyd is quite correct in stating that he has ceased to visit Hertford for a long time, and this is the only portion of his advertisement in the *Times* which I can unreservedly declare to be entitled to the character of an established fact. You yourself, Sir, have often, as a medical journalist, called on the medical officers of *Christ's Hospital* for an explanation of the principles on which they have treated this disease. You have said "Tell us what you have done; let us know what your principles of treatment, if you have any, may be, as well as your practice," intending, I presume, to warn the medical profession against adopting it, as the most notoriously inefficient and injurious that has ever been adopted in any public institution in England. I am, Sir, very obediently yours,

SAMUEL PLUMBE.

14, Southampton-street, Bloomsbury-square, Feb. 21st, 1835.

## CHRIST'S HOSPITAL.

*To the Editor of* THE LANCET.

SIR,—I am delighted to find that you have at last detected and exposed the *humbug* in *Christ's Hospital*. Until within the last seven or eight years, little or nothing was ever heard of the ring-worm,—commonly called (by the *blues*) the "tad." I was, myself, in *Christ's Hospital* twenty years ago, and then the average number of boys afflicted with the "tad," was about *six*, and they, with proper treatment, under Mr. Colbeck, surgeon, of Hertford, very soon recovered. Indeed, they were seldom or never removed to the sick ward, but since Mr. Lloyd's election there have been three hundred at a time kept from school, for months together, without the requisite attention to their education, and, I believe, at this time some of the children have not returned from spending their holidays, having been absent two years, for they are not allowed to come back unless they bring a certificate from a surgeon, *approved of by Mr. Lloyd*, who has often refused boys who have been examined by far more clever men than himself. I know of a case myself in which a child who was about to be admitted, was examined by Mr. Lloyd, who said that his head was bad, though the father declared to me it was only a little scurf, to which all heads are liable. He immediately took the child to another surgeon, and asked his advice, stating that he wished him to have medical treatment. The surgeon felt his pulse, asked him two or three questions, and, then turning to the father, said, "Do you wish me to pick your pocket? If so, I will make

up something for him, but your son is in excellent health." The father, in consequence, threw out some hints when the boy was next examined by Mr. Lloyd, observing that he should expose the circumstances, and named the surgeon who had previously seen the lad. Upon this, Mr. Lloyd admitted him.

I am informed that Mr. Colbeck resigned a short time back, and was heard to say, that "Mr. Lloyd had treated him shamefully." Mr. C. is not the "venerable apothecary," as you are aware, but a clever and respectable surgeon of Hertford; but if you make inquiries, which I am sure you will if it be to render a service to a living individual, you will find that Mr. Lloyd has made a fine job of the "tad." Mr. Ludlow, the writing master at Hertford, was usher at the time I allude to, when only six was the average number of "tads."

I have not written this from any ill feeling to Mr. Lloyd, for I have never seen that gentleman, but I detest the system, and feel convinced that if you follow it up, you will find all I have said, and much more, quite true. Trusting you will excuse the liberty I have taken in addressing you, and wishing you long life and success in your parliamentary career, believe me to be a sincere admirer of the unflinching Thomas Wakley, and

A Blue.

Jan. 25, 1835.

## MEDICAL OPINIONS AND SERVICES AT INQUESTS.

*To the Editor of* The Lancet.

Sir,—On the approach of a session of Parliament which in all probability will be more important to the interests of our profession than any preceding one, I think it doubly the duty of medical men to exert themselves, individually as well as collectively, to procure the abolition of the abuses which infest it. For my own part, considering the non-payment for attendance of medical witnesses at coroners' inquests one of the greatest injuries to the profession, I have for some time determined to act in accordance with advice so frequently given in your excellent publication The Lancet.

Accordingly, on Tuesday the 27th of January, on being summoned to attend an inquest held on the body of an infant in Coal-yard, Drury-lane, before Mr. Stirling, I became a party in the following examination:—

*Coroner.* What do you know of this case?—*Witness.* I attended the child from the 13th of January to the 24th, for an acute inflammation of the chest.

*Cor.* Go on.—*Wit.* The child gradually improved under the means I employed, until Saturday the 24th, when I informed the mother that my further regular attendance was unnecessary, the child being quite beyond danger, with the exercise of common care on her part.

*Cor.* Well, what then?—*Wit.* On the following day, Sunday, the child was found dead in its bed at about seven o'clock in the morning, very much to my surprise.

*Cor.* Well?—*Wit.* I understand the parish surgeon was sent for, but the child was quite dead, one arm being rather black, and the hands firmly clinched.

*Cor.* Did you examine the body?—*Wit.* No.—*Cor.* Why not?—*Wit.* Because an inquest was about to be held on it.

*Cor.* What do you suppose was the cause of death?—*Wit.* I cannot give a conscientious medical opinion without making a post-mortem examination of the body, and I shall neither give the one nor perform the other without receiving a proper remuneration.

*Juryman.* On your oath have you any reason to doubt that the child died a natural death?—*Wit.* I repeat that I will not give any opinion without a fee.

The parish-surgeon was then sworn, and he *gave* his opinion that the child died a natural death.—*Verdict* "Natural Death." If there had been no parish surgeon to *give* an opinion, would not the verdict have been the same, without the institution of any examination, or the production of any medical opinion?

Several of the Jury expressed themselves dissatisfied at the course I pursued, and thought I was as much bound to yield my time, give my opinion, and examine the body, as they were to sit on the jury. "Else," said they, "what was I there for?"

I am fully convinced that if all medical men invariably refused to give opinions and make inspections, we should soon see your assertion verified that remuneration is due to them on those occasions.

I am, Sir, your obedient servant,

Samuel Richards.

8, Caroline-street, Bedford-square,
January 28th, 1835.

M. Bailliere has just published the first part of the announced "Outlines of Anatomy" by Professor Grant. It is well printed and thoroughly illustrated by wood engraving. In testimony of the merit of the text, we are sure that it is sufficient to point to the name of the author.

MOCK ECONOMY, JOBBING, AND ABUSE OF PATRONAGE IN THE

## ARMY MEDICAL DEPARTMENT.

*To the Editor of* THE LANCET.

SIR,—In 1829 it was determined by the then Secretary at War, Sir H. Hardinge, to enforce as strict a retrenchment in the army expenditure as was consistent with the public service. Accordingly, amongst others, orders were given to that effect to the chief of the above department, and this was followed by a very considerable reduction, including the principal medical officers serving at the Mauritius and the Cape of Good Hope, viz. Dr. M'Mullen and Dr. John Arthur, who held the grade of Physicians to the Forces, with the pay of 19*s.* per diem, and who were succeeded by Staff Surgeons Collier and Murray, at the rate of 18*s.* 10*d.*, making a savin; of *twopence per diem* at each colony, *an important sum.* But mark the result. In 1830, the two latter gentlemen were promoted to the grade of Deputy Inspectors General, with the pay of 30*s.* per diem, and 5*s.* command money, making a larger sum by 16*s.* each of daily pay than the reduced physicians were in the receipt of; and what adds more to the enormity of the job, the two Deputy Inspectors General are now entitled to a retired allowance of 1*s.* per diem more than the physicians' *full pay* at the period of their reduction. So much for the Doctor Baronet's economy. It may be necessary to observe, that Drs. M'Mullen and Arthur had the highest probationary testimonials of the creditable and satisfactory manner in which they had conducted the duties entrusted to them, in the *hand-writing* of their chief the great Doctor Baronet.

Is is stated, and is received as a fact, that the reasons given for the preference so conspicuously shown to the staff-surgeons, was their combining a knowledge of surgery with medicine, forgetting that both the physicians had been taught surgery; one of them also having served long as surgeon to a regiment, at the same time holding most respectable degrees in medicine,—Dr. M'Mullen one from Edinburgh, he being also a licentiate of the Royal College of Physicians of London, and Dr. Arthur, one from Trinity College, Dublin, perhaps the most valuable professional testimonials held by any medical officers in the army, whilst the favoured staff-surgeons had probably only the certified qualifications for acting as army surgeons. One of them, Murray, while serving at the Cape of Good Hope, and when somewhat advanced in life, sent to Aberdeen and St. Andrew's, and *purchased* a degree to enable him to receive fees in civil life as an M.D.

Suppose the Hon. Doctor Baronet's reasons had been valid, how can he reconcile to himself, or how can he suppose a discriminating body of officers can reconcile to themselves, the inconsistency of his conduct in several of his appointments at other stations as principal medical officers,—for example, Dr. Skey, in Canada, certainly a respectable physician, but who, I venture to say, never had an amputating knife in his hand in his life,—Dr. John Davis, at Malta, who, although an aspirant for medical fame, I believe never performed an operation, nor ever dressed a soldier's wound,—and last, though not the least absurd, Staff-surgeon Dr. Barry, in Jamaica, who has even been known at the Cape of Good Hope to refuse attending surgical cases?

With such facts staring him in the face, for any person capable of a moment's reflection to imagine that he retains the confidence and respect of those who are serving under him, or that he will do so in the army when these things are made known, is the superlative of credulity.

If surgery be so valuable in the army, what has become of all the practical experience of the Peninsula and Waterloo? With a few exceptions there is scarcely to be seen in the army list the name of one amongst the medical staff who bore an active part in those campaigns. How different is the regulation of other branches of the service!

Your publication of the above, if it do not open the eyes of a certain great official Dr. to his loss of popularity, will at least account for it to his friends. I remain, Sir, your obedient servant,

Feb. 19th, 1835. VERITAS.

## CORRESPONDENTS.

*R. B.* will see the necessity of enabling us to add his name to his letter, if it be published, as it refers to facts quoted on his personal authority.

## LITERARY INTELLIGENCE.

Mr. Crosse, of Norwich, has published the Treatise on the Formation, Constituents, and Extraction of the Urinary Calculus, with which he gained the Jacksonian Prize of 1833 at the London College of Surgeons. It makes a handsome quarto volume, with numerous coloured plates, and has evidently been brought out without stint in the expenditure which was essential to its production in a most complete and useful manner.